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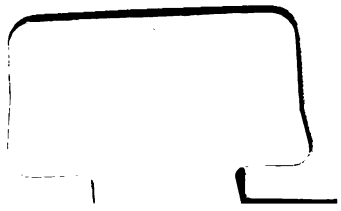

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MISCELLANEOUS DOCUMENTS

OF THE

HOUSE OF REPRESENTATIVES

FOR THE

FIRST SESSION OF THE FORTY-EIGHTH CONGRESS,

1883-'84.

IN FORTY VOLUMES.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1884.

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DEPARTMENT OF THE INTERIOR

BULLETINS

OF THE

UNITED STATES

GEOLOGICAL SURVEY

VOL. I

WASHINGTON
GOVERNMENT PRINTING OFFICE
1884

DEPARTMENT OF THE INTERIOR

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ADVERTISEMENT.

The publications of the United States Geological Survey are issued in accordance with the statute, approved March 3, 1879, which declares that—

"The publications of the Geological Survey shall consist of the annual report of operations, geological and economic maps illustrating the resources and classifications of the lands, and reports upon general and economic geology and paleontology. The annual report of operations of the Geological Survey shall accompany the annual report of the Secretary of the Interior. All special memoirs and reports of said Survey shall be issued in uniform quarto series if deemed necessary by the Director, but otherwise in ordinary octavos. Three thousand copies of each shall be published for scientific exchanges and for sale at the price of publication; and all literary and cartographic materials received in exchange shall be the property of the United States and form a part of the library of the organization. And the money resulting from the sale of such publications shall be covered into the Treasury of the United States."

ANNUAL REPORTS.

From the above it will be seen that only the Annual Reports, which form parts of the reports of the Secretary of the Interior and are printed as executive documents, are available for gratuitous distribution. A number of these are furnished the Survey for its exchange list, but the bulk of them are supplied directly, through the document rooms of Congress, to members of the Senate and House. Except, therefore, in those cases in which an extra number is supplied to this office by special resolution, application must be made to members of Congress for the Annual Reports, as for all other executive documents.

Of these annuals there have been already published:

I. First Annual Report to the Hon. Carl Schurz, by Clarence King, 8°, Washington, 1880, 79 pp., 1 map.—A preliminary report describing plan of organization and publications.

II. Report of the Director of the United States Geological Survey for 1880–'81, by J. W. Powell, 8°, Washington, 1882, lv, 588 pp., 61 plates, 1 map.

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Production of Precious Metals in the United States, by Clarence King, pp. 331–401, plates 48–53.
A New Method of Measuring Heights by means of the Barometer, by G. K. Gilbert, pp. 403–565, plates 54–61.
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The Third Annual Report is now in press.

MONOGRAPHS.

The Monographs of the Survey are printed for the Survey alone, and can be distributed by it only through a fair exchange for books needed in its library, or through the sale of those copies over and above the number needed for such exchange. They are not for gratuitous distribution.

So far as already determined upon, the list of these monographs is as follows:

I. The Precious Metals, by Clarence King. In preparation.

II. Tertiary History of the Grand Cañon District, with atlas, by Capt. C. E. Dutton. Published.

III. Geology of the Comstock Lode and Washoe District, with atlas, by George F. Becker. In press.

IV. Comstock Mining and Miners, by Eliot Lord. In press.

V. Copper Rocks of Lake Superior and their continuation through Minnesota, by Professor R. D. Irving. In press.

VI. Older Mesozoic Flora of Virginia, by Prof. Wm. M. Fontaine. In press.

Geology and Mining Industry of Leadville, with atlas, by S. F. Emmons. In preparation.

Geology of the Eureka Mining District, Nevada, with atlas, by Arnold Hague. In preparation.

Coal of the United States, by Prof. R. Pumpelly. In preparation.

Iron in the United States, by Prof. R. Pumpelly. In preparation.

Lesser Metals and General Mining Resources, by Prof. R. Pumpelly. In preparation.

Lake Bonneville, by G. K. Gilbert. In preparation.

Dinocerata. A monograph on an extinct order of Ungulates, by Prof. O. C. Marsh. In press.

Sauropoda, by Prof. O. C. Marsh. In preparation.

Stegosauria, by Prof. O. C. Marsh. In preparation.

Of these monographs, No. II is published, viz:

II. Tertiary History of the Grand Cañon District, with atlas, by C. E. Dutton, Capt. U. S. A., 1882, 4°, 264 pp., 42 plates, and atlas of 26 double sheets folio. Price $10.12.

Nos. III, IV, V, and VI are in press and will appear in quick succession. The others, to which numbers are not assigned, are in preparation.

BULLETINS.

In its Bulletins the Survey will print such papers relating to the general purpose of its work as do not properly come under the heads of ANNUAL REPORTS or MONOGRAPHS.

The Bulletins will each contain but one paper, and be complete in itself. They will, however, be numbered in a continuous series, and will in time be united into volumes of convenient size. To facilitate this each Bulletin will have two paginations, one proper to itself at the top, and at the bottom, one which belongs to it in the volume.

Of this series of Bulletins this paper forms No. 1, and is also the first part of Volume I.

Its price is ten cents.

Correspondence relating to the publications of the Survey, and all remittances, should be addressed to the

DIRECTOR OF THE UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C.

WASHINGTON, D. C., *February* 24, 1883.

DEPARTMENT OF THE INTERIOR

BULLETIN

OF THE

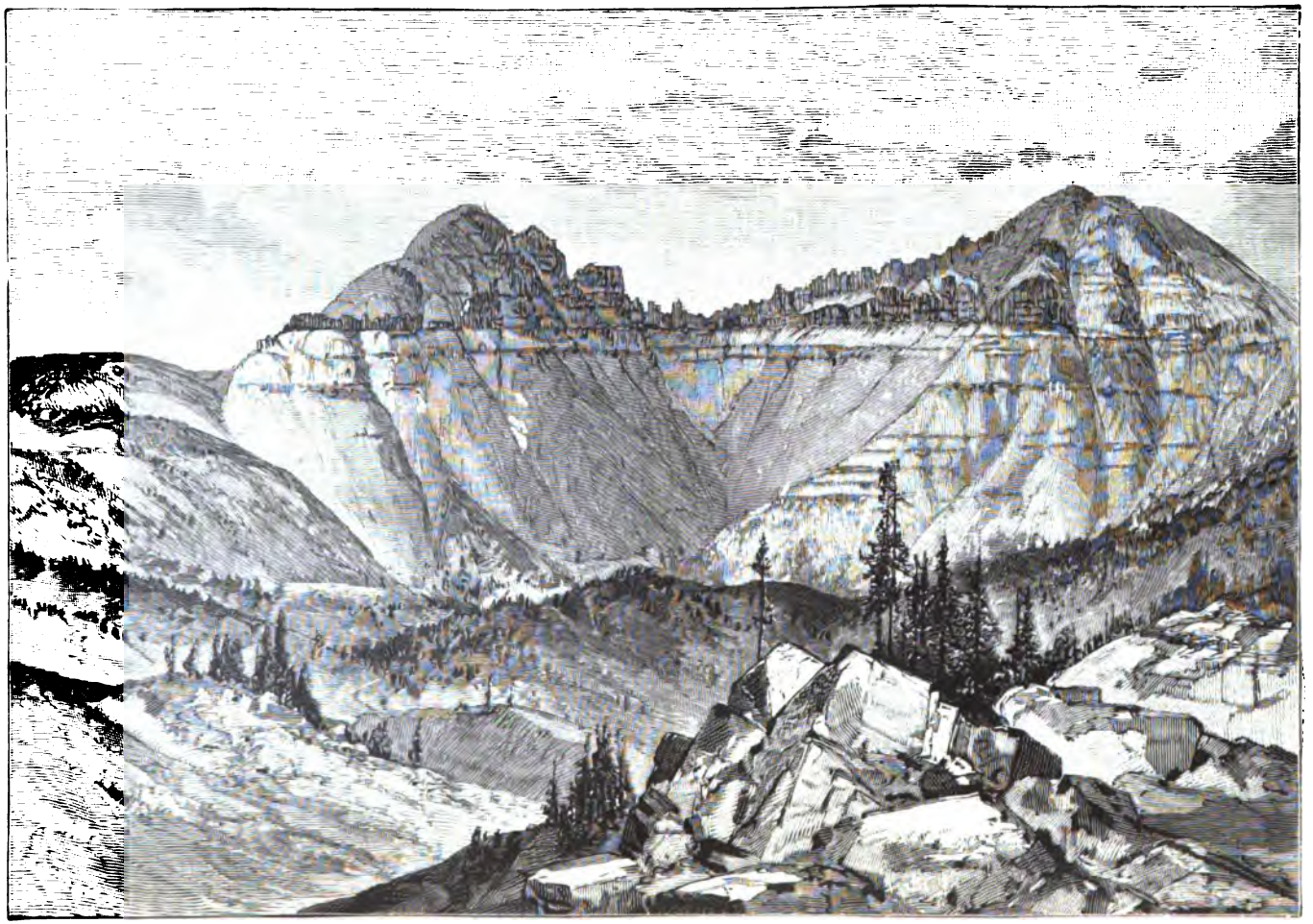
UNITED STATES

GEOLOGICAL SURVEY

No. 1

ON HYPERSTHENE-ANDESITE AND ON TRICLINIC PYROXENE IN AUGITIC ROCKS, BY WHITMAN CROSS; WITH A GEOLOGICAL SKETCH OF BUFFALO PEAKS, COLORADO, BY S. F. EMMONS, GEOLOGIST-IN-CHARGE OF ROCKY MOUNTAIN DIVISION

WASHINGTON
GOVERNMENT PRINTING OFFICE
1883



BUFFALO PEAKS—FROM THE NORTH.

UNITED STATES GEOLOGICAL SURVEY
J. W. POWELL DIRECTOR

ON HYPERSTHENE-ANDESITE

AND ON

TRICLINIC PYROXENE IN AUGITIC ROCKS

BY

WHITMAN CROSS

WITH A

GEOLOGICAL SKETCH OF BUFFALO PEAKS COLORADO

BY

S. F. EMMONS
GEOLOGIST IN CHARGE OF ROCKY MOUNTAIN DIVISION

WASHINGTON
GOVERNMENT PRINTING OFFICE
1883

LETTER OF TRANSMITTAL.

UNITED STATES GEOLOGICAL SURVEY,
DIVISION OF THE ROCKY MOUNTAINS,
Denver, Colo., October 1, 1882.

SIR: I have the honor to transmit herewith a paper by Mr. Whitman Cross on Hypersthene-Andesite, with a brief sketch by myself of the geology of Buffalo Peaks.

The material from which it has been prepared was obtained during the geological study of the Leadville region, and would naturally have been included in the monograph on that district but for the following reason: The andesites from Buffalo Peaks, which, at first glance, appeared to be most characteristic augite-andesites, were found by Mr. Cross on careful examination to differ essentially from the normal order as commonly described. In tracing out the relations of these rocks to the closely-allied so-called augite-andesites, Mr. Cross has obtained results which, if substantiated, give to these investigations a much more general than local character, and make them of value to lithologists in general; so that it seems desirable that they should be published by themselves in the form of a special paper.

Very respectfully, your obedient servant,

S. F. EMMONS,
Geologist in Charge.

Hon. J. W. POWELL,
Director United States Geological Survey.

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INTRODUCTORY GEOLOGICAL SKETCH OF BUFFALO PEAKS, MOSQUITO RANGE, COLORADO.

By S. F. Emmons.

During the summer of 1880, a little over two months' field-work was devoted by the party under my charge to a geological study of a portion of the Mosquito or Park Range, as an essential preparation for the investigation of the remarkable ore deposits of the Leadville region.

The area covered by the geological map prepared at this time, which included a length of about 20 miles along the crest, comprised not only its most elevated portion, but also, with a single exception, the most interesting part of the range from a geological stand-point. This exception was found in the Buffalo Peaks, a double pointed mountain mass rising about 1,000 or 1,500 feet above the main crest, some 10 miles south of Weston's Pass, at the southern limits of our map. Two days were devoted to a hasty examination of these interesting peaks; but, although as many weeks might have profitably been employed in their study, for the reason that the geological phenomena here exhibited had no apparent connection with the ore deposits at Leadville, it was not considered advisable at the time to devote any more of the brief working season of this elevated region to an extraneous study, however interesting. Inasmuch, however, as the microscopical investigations of the specimens collected at that time, made by Assistant Geologist Mr. Whitman Cross, have led to the discovery of hitherto unrecognized characteristics in an important group of Tertiary volcanic rocks, which is set forth in the following pages, it may not be inappropriate to preface his paper with a brief geological sketch of the structure of these peaks, and of their relation to the rest of the range.

The Mosquito Range north of Weston's Pass is made up of Palæozoic beds about 4,500 feet in thickness, extending from the Cambrian to the Upper Carboniferous, with intercalated sheets or intrusive masses of various quartz porphyries and porphyrites, resting on Archæan granite and gneiss. The elevation of the range, which took place at the close of the Cretaceous period, was accompanied by the compression of these beds into a series of sharp folds, characterized by a steep side to the west, or towards the Archæan island, round which the sediments were originally deposited, and by numerous longitudinal faults, with

an upthrow to the east, more or less parallel to the axes of the folds, with which, in general, they are intimately connected.

Towards the south this structure becomes gradually simplified, and the porphyry bodies thin out. At Weston's Pass, already, in place of the complicated system of faults and folds observed in the latitude of Leadville, two great anticlinal and synclinal folds are found, whose axes have the direction of N. 30° W., and whose eastern member has been raised by displacement along a fault plane having about the same direction. One of these folds occupies the main crest of the range, and its corresponding fault runs along the trough of the synclinal on the west, by whose movement the Archæan granite is raised on the crest of the range about 2,000 feet above its corresponding position under the Palæozoic beds which form the surface at the pass itself. The thickness of the interbedded porphyry sheet, which opposite Leadville reaches over 1,000 feet, has here diminished to a little over 20 feet.

The other fold forms a secondary elevation, called Sheep Ridge, on the foot-hills, five miles east of the crest. Here the fault line corresponds very nearly with the axis of the anticlinal fold, which is also that of the ridge, the movement of displacement gradually decreasing in a southerly direction, until the fault ridge becomes simply the elevation of an anticlinal fold. About five miles farther south, at the junction of the Little Platte, which from Weston's Pass flows southeast along the trough of the synclinal, and of Rough-and-Tumbling Creek, which drains the north slope of Buffalo Peaks, not only have the two great faults disappeared, but the two systems of anticlinal folds are merged into a single monoclinal.

Topography is here in singular sympathy with geological structure. Both the main crest and the secondary ridge to the east have the same general direction, with the strike of the geological formations, while the average direction of the topographical crest of the range, as a whole, is more nearly north and south, and its structure consequently that of a series of ridges *en échelon*. Sheep Ridge on the east disappears completely under the plain before the valley of the Little Platte is reached, and is succeeded by an isolated butte called Black Hill, formed by a massive outburst of crystalline rhyolite, breaking through and spreading out over the upturned edges of the Upper Coal Measure formation. The main ridge, which forms the eastern wall of Weston's Pass, descends rapidly to the south, reaching the level of the valley as the Little Platte bends east to flow out into the plains of the South Park, just above its junction with Rough-and-Tumbling Creek. Between these two creeks and near their junction is a series of low ridges formed by strata standing at a great variety of angles and with varying directions of strike, which show the effect of the merging of the double system of folds to the north into the simple monoclinal structure which prevails to the south.

The topographical divide of the range therefore leaves the main crest

at Weston's Pass, and crosses to a second ridge, which overlaps it, on the west of the pass. Stretching southeastward in the direction of the strike, it continues with apparent regularity as far as the Trout Creek Pass, about 20 miles distant along the crest of the range. The structure of this portion of the range, as determined in our hasty visit, seems quite simple. On the west, towards the Arkansas Valley, it presents steep precipitous slopes of Archæan granite. The crest of the higher portion of the ridge is covered by a thin shell of easterly-dipping Cambrian quartzite whose average thickness in this region is about 150 to 200 feet. Resting conformably on this is the White or Silurian Limestone, of about equal thickness, succeeded by the Lower Carboniferous or Blue Limestone, also about 200 feet in thickness; then 2,000 to 2,500 feet of silicious beds, which have been designated the Weber grits; and along the extreme eastern flanks of the range the Upper Coal Measure beds, which consist partly of limestone and partly of coarse reddish sandstone. In the plains along the eastern foot of the range are found occasional ridges of the red sandstones and shales of the Trias, from which it is probable that the salt of the salt springs east of Buffalo Peaks has been derived.

Midway in this monoclinal ridge, and resting on the upturned edges of the strata, are the horizontal beds of andesitic lavas which form the Buffalo Peaks. Their western base rests on granite, immediately under the quartzite, while their eastern flows, whose limits were not ascertained, probably extend well out over the Upper Coal Measure formation. The direction of strike of the sedimentary beds, on the north side at least, seems to have been but little affected by this extrusion of volcanic material; but in immediate contact with the lava, as will be shown later, they have been considerably metamorphosed.

The Buffalo Peaks form an extremely picturesque mountain mass, whose highest point rises to an elevation of 13,541 feet above sea-level, or about 4,000 feet above the adjacent valleys. It consists of a narrow curving ridge forming about one-third of a circle, its concave side toward the north, with a culminating point at either extremity of the arc, the connecting saddle being about 500 feet below their summits. From the northeast base of the eastern peak spreads a broad, flat, massive shoulder, whose area is considerably greater than that of the main peaks. Between the two peaks lies a semi-circular amphitheatre about 2,000 feet deep, in which the appropriately named Rough-and-Tumbling Creek takes its rise, and flows first northward, then eastward to its junction with the Little Platte. The upper 500 feet of the two main peaks is formed of hornblende-andesite of decidedly trachytic habit. Its matrix is of a brownish-gray color, with small crystals of white feldspar and frequent needles of black hornblende. In it columnar structure is very well developed, especially on the connecting ridge between the two peaks, where the columns are often only a few inches in diameter. At this point, rounded fragments of Archæan rocks included in the ande-

site are of frequent occurrence. There is also a very considerable development of hyalite on the weathered surface of the rocks, and fulgurite is found at the summit of the higher or western peak, lining small holes made by the electric fluid.

The base of the hornblende-andesite is extremely well defined, as shown in the frontispiece, by a horizontal line at about the level of the saddle connecting the two main peaks. Below this, as well as could be seen on the walls of the amphitheatre where they were sufficiently steep not to be obscured by *débris*, the mass of the mountain seems to be made up of tufas and of half-glassy modifications, which are also horizontally bedded, conformable with the base line of the hornblende-andesite. A section was made down the steep spur extending from the north base of the eastern peak into the amphitheatre, giving a freely estimated thickness of 1,000 to 1,500 feet of these tufaceous varieties.

SECTION.

1. 200–500 feet.—Hornblende-andesite.
2. 50 feet.—Semi-vitreous tufa of bright red color, with streaks of black and reddish glass running through it, and containing crystals of basic minerals and of feldspar, with innumerable small inclosed fragments of lavas and other rocks not always determinable.
3. 100 feet.—Beds of similar material, rather black in color. Among inclosed fragments rounded masses of granite, up to 6 feet in diameter, are frequent. Through the mass are thin seams or beds of black glass of a perlitic structure, like an obsidian, with plentiful small fragments of feldspar scattered through the mass.
4. 100 feet.—White and lilac colored porous tufa, with fragments of light-colored trachytic rock, rich in smoky quartz (dacite or rhyolite?).
5. 200 feet.—Tufaceous breccia, with boulders of black, vitreous-looking hypersthene-andesite.
6. 5 feet.—Bed of *dacite (rhyolite?)*.*
7. 50 feet.—Light-colored tufa with fragments of dacite (rhyolite?).
8. 500–700 feet.—Space somewhat covered, mostly of tufa, inclosing fragments of a great variety of rocks.

The next outcrop below the base of the spur was found to be limestone and shales, probably belonging to the Weber grits formation, dipping to the northeast at an angle of about 45°, and having the regular strike of the sedimentary rocks of the region. Within these tufa beds, and weathered out on their surface, were found an immense number of

*The rock described here as dacite (rhyolite?) is one which, from the specimens at hand, it has been impossible to assign definitely to either of these two classes. Macroscopically it resembles the rhyolites, having large smoky quartz and glassy-looking feldspars in a lilac-colored matrix, and possessing a very decided trachytic habit. Microscopical examination fails to determine definitely whether the one specimen in the collection contains more orthoclase or plagioclase feldspar. A partial chemical analysis is equally unsatisfactory, giving silica, 66.500; potash, 2.567; soda, 3.868. It is identical with a rock found breaking through the granite, near the town of Granite, in the Arkansas Valley, west of the Buffalo Peaks. A further field examination will be required to satisfactorily determine the character and relations of this rock.

more or less rounded fragments of included rocks, consisting mainly of granite and various lavas; the latter of which, as far as examined by Mr. Cross, have proved to be of the same character as the northeastern shoulder, *i. e.*, hypersthene-andesite.

The rock of the eastern shoulder, as far as examined, is a dark, nearly black, compact, semi-vitreous rock of conchoidal fracture, which in the field was determined at once as an augite-andesite. The average level of this eastern spur is some 700 or 800 feet lower than that of the summit of the peaks. As far as our observation extended, this rock was not found in mass in direct connection with the hornblende-andesite.

At the northeast base of the eastern peak, about midway between well-defined outcrops of the two rocks, a German miner had sunk a shaft on the flat surface of the ridge, in an iron-stained, clayey material, undoubtedly the result of decomposition of the lava, in which he found very large, irregular masses of milk-white, common opal. Some of these masses reached several feet in diameter, and when broken open it was generally found that their centre consisted of opaque, flint-like chalcedony; showing that in this case the opal had probably resulted from the hydration of chalcedony concretions within the mass of the rock. It was also observed that while the internal kernel of flint readily gave sparks when struck with steel, the exterior opaline portion was not of sufficient hardness to do this. A chemical examination was made of the flint-like kernel and of the white opaline alteration product, with the following result:

	Flint.	Opal.
Specific gravity	2.570	2.023
Hardness	6.	5.5
Loss by ignition (water)	1.843	2.584
Insoluble (in caustic potash) silica	32.430	0.710
Soluble silica	65.727	96.706
	100.000	100.000

From which it would seem that the change to the opaline form is not simply the result of hydration, since the increase in water in the latter case is only 0.741, or a little over a third more than in the original form of the secretion, but that this must have been accompanied by some molecular change, by which the percentage of soluble silica has become nearly one-half greater.

The outcrops of the upturned sedimentary beds could be traced up to the very entrance of the amphitheatre; the Weber shales, as already mentioned, had been already observed at the base of the eastern peak; the Lower Quartzites resting on the granite form the main crest of the range immediately north of the western peak, while at the northeast base of this peak, at the entrance to the amphitheatre, there was

a cropping of white and blue silicified limestone, showing in a very interesting manner a relic of the solfataric action which probably succeeded the eruption of the lavas. Here the bedding is distinctly seen; the color of the limestone, its granular structure and characteristic veining are still preserved; but the whole mass is completely transformed into silica, and the surfaces frequently coated with a thin white opaline deposit. Chemical tests of three specimens brought from these outcrops, one white or drab, the other two blue limestone, showed the following contents in silica:

	Per cent.
White limestone	97.1
Bluish limestone	97.7
Darker limestone	78.9

with an apparently more than normal proportion of manganese, especially in the darker colored specimen.

The southern slopes of the peak were not examined, but from the summit outcrops of the upturned sedimentary beds could be seen continuing on southward beyond the base of the peak, apparently in a direct line with those observed on the north. The very centre of the amphitheatre was also not visited, as the soft slopes resulting from the decomposition of the tufa beds promised but few outcrops.

Two important questions present themselves in the consideration of the structure of this interesting mass; neither of which, unfortunately, can be considered as definitely decided by the hasty observations made during this visit:

First. Are the peaks the relics of an old volcanic crater?

Second. Was the hornblende- or the hypersthene-andesite the earlier flow?

To the first question the circular form of the main ridge, and its bedded structure, seem at first glance to give a decidedly favorable answer. More mature consideration shows that the present form was mainly due to glacial and post-glacial erosion, whose work in this region has been on such a stupendous scale that evidently the present form of the peaks affords little guide as to the original condition of the mass. Had the present semi-circular ridge once formed part of the crater, we should expect to find some relic of the rest of the circle resting on the ridges to the north; but with the exception of the northeast shoulder, which consists of a distinct rock, and which is evidently also the result of a distinct flow, no lavas were found north of the entrance to the amphitheatre.

As regards the relative ages of the two varieties of andesite, it is to be observed, first, that the hornblende andesite is the higher of the bedded series; and, second, that from the tufaceous beds no fragments of the hornblende-andesite were obtained; while those of hypersthene-andesite were of very frequent occurrence. On the other hand, the flat eastern shoulder, which is probably formed of hypersthene-andesite, re-

sembles in its form the lateral flows which come from the side of already built-up volcanoes; and as a general rule the more basic augite-andesites have been found to be younger than the hornblendic varieties. In the case of lavas, superposition is by no means necessarily a proof of later origin, inasmuch as the later flows often force themselves under those already existing. Still, in the present case, it must be acknowledged that the evidence, as far as obtained, is in favor of the earlier origin of the hypersthene-andesite.

A third point of interest for future investigation is the determination of the true character and relations of the dacite (rhyolite?) rocks.

The fact that in the present stage of microscopical lithology the old test of the absence of striation lines visible under the microscope is no longer sufficiently conclusive to determine a feldspar as orthoclastic, renders of doubtful value the earlier classification of many rocks as trachytic or andesitic. Many facts already observed by us suggest a doubt whether von Richthofen's classification of volcanic rocks will be found to hold good everywhere in Colorado, and even that many modifications of the relations of the older eruptive rocks, as well as of those of Tertiary age, may be found necessary. The field of work is great, and will involve long and laborious studies before definitive results can be obtained. In the western portion of the Cordilleran system Tertiary volcanic rocks and recent lavas are in vast preponderance, and the older eruptives have been found thus far in but few points. In Colorado, however, while the development of Tertiary eruptive rocks is considerable, it seems probable that a very large proportion of the eruptive rocks will prove to belong to those generally classed as older, from their lithological characteristics alone; of these, however, the most widely developed class may doubtless prove to be Post-Cretaceous, and of those which belong lithologically to the class of Tertiary eruptives or volcanics, there are many whose period of eruption can be but little later than this period.

ON HYPERSTHENE-ANDESITE AND ON TRICLINIC PYROXENE IN AUGITIC ROCKS.

By Whitman Cross.

CHAPTER I.

HYPERSTHENE-ANDESITE FROM BUFFALO PEAKS, COLORADO.

The microscopical and chemical investigation of certain andesites from the Buffalo Peaks in the Mosquito Range, Colorado, having proved conclusively that a rhombic pyroxene is, after plagioclase, the most essential constituent, the writer was led to examine carefully all similar rocks at his command. As the results attained are wide-reaching, and affect many well-known European rocks, the observations made on the Buffalo Peaks rock will be given in detail in Chapter I; the results of the comparative study are embodied in Chapter II.

The "Introductory Geological Sketch" by Mr. S. F. Emmons renders any further description of the Buffalo Peaks unnecessary; all reference to topographical or structural detail will be found sufficiently explained in that sketch.

DESCRIPTION OF ROCK.

Those rocks which are to be specially considered in the following pages occur principally as included fragments in the tufa beds, and were found in place only on the shoulder of the main peak which projects to the northeast.

This latter rock is compact, dark or almost black in color, showing minute glassy feldspars, which, by reason of their transparency, seem dark also. A careful examination shows a number of small, dark-green grains and prisms, which are undoubtedly pyroxene, and glistening ore particles. In the fresh state the base in which these minerals lie has a vitreous lustre.

The fragments found in the tufa vary in outward appearance. Part of them are as dark and compact as the one just described, while others are lighter colored, with more distinct crystals of feldspar and a some-

what porous groundmass. In the darker ones, the feldspars are in part of a clear yellowish tinge, producing a very deceptive resemblance to the partially decomposed olivine of basaltic rocks.

When examined under the microscope in ordinary light, these rocks seem to be typical augite-andesites of very simple composition; clear plagioclase crystals, pyroxene in small crystals and irregular grains, with magnetite and apatite, are the only mineral constituents to be recognized. These larger individuals lie in a groundmass composed of thin plates of plagioclase, light-green microlites of pyroxene, and minute octahedrons of magnetite, with a glass basis between them, which is usually clear, though sometimes devitrified by light-brownish globulites. In the rock occurring in place, the microlites are unusually large, while in the others they sink to extraordinarily minute needles.

PECULIARITIES OF THE PYROXENE.—Examined in polarized light, none of the elements, except the pyroxene, show noteworthy peculiarities. A study of the pyroxenic constituent forces one to the conclusion that *a rhombic mineral, probably hypersthene, is largely predominant, while a great number, if not all of the remaining individuals, must be considered as triclinic in crystallization.*

This conclusion is based on the following microscopical and chemical investigations:

In the first place, on testing under the microscope, in polarized light, all the prismatic sections and small prisms whose vertical axis seemed to lie in the plane of the thin section, with regard to their optical orientation, it was found that at least one-half, and generally a much larger proportion, possessed an axis of elasticity parallel to the vertical crystallographic axis. Now, the only section of a monoclinic mineral, in the prismatic zone, which could act in this manner, is plainly that parallel to the orthopinacoid. And any one who has tested the prismatic sections of augite or hornblende, in slides of massive rocks, knows how rarely a section can be found so nearly parallel to the orthopinacoid that no deviation of the direction of total extinction from the vertical crystallographic axis can be detected. The justifiable conclusion is therefore reached, that nearly all of the sections in question belong to a rhombic mineral.

In the next place, the sections apparently cut perpendicularly to the vertical axis present another remarkable deviation from the rule. While such sections should give no data for the separation of rhombic from monoclinic pyroxene, since in both the directions of extinction coincide with the diagonals of the prism, it is here found that in only a portion of the sections does this relation actually exist, and, further, the numerical ratio between those cross-sections with normal and those with abnormal optical relations is, in any given slide, nearly equal to the ratio between those prismatic sections showing the rhombic and those with deviating optical orientation. It is at once suggested that the cross-sections showing normal optical action belong to the same

mineral which, in longitudinal sections, appears as rhombic, while the prismatic sections, which are seemingly normal augite, belong to the apparently triclinic mineral.

The rhombic mineral as shown by the chemical investigations (p. 29) must be considered as hypersthene. Its pleochroism, though distinct, is by no means strong. A section nearly or quite at right angles to the prism has a light-greenish-yellow color, and the changes on revolving it through 90° are too slight to be expressed. In prismatic sections the hypersthene is pale-green in color when its vertical axis is perpendicular to the principal section of the nicol, and greenish-yellow when these directions are parallel. In the latter position there is sometimes a tinge of brown. The other pyroxene is not pleochroic to any noticeable degree. It is always of a pale-green color.

The cross-sections of hypersthene are very well defined. They show the characteristic eight-sided figures of pyroxene, with a distinct prismatic cleavage, and, quite subordinate in some of the sections, a cleavage parallel to the pinacoids. In most of the sections showing a rhombic character, the pinacoidal faces are predominant, the prism simply truncating the angles of the rectangle formed by the former faces.

The hypersthene does not show the prismatic cleavage in longitudinal sections so plainly as the triclinic mineral. The lines are finer, and cross-fissures are common. The terminations, too, are often quite regular, being doubtless caused by domes. (See Fig. 9, Plate II.) It is in the small crystals especially that the regular form of a rhombic mineral is most plain. In the dark and compact rocks there is less difference between these two minerals than in the lighter and porous ones. In the latter one finds some crystals of hypersthene, which are fibrous, with an incipient decomposition proceeding from the cross-fissures along the vertical cleavage planes. (See Fig. 8, Plate II.)

TRICLINIC PYROXENE.—Those cross-sections, showing an anomalous position of the axes of elasticity, are in many ways remarkable. The outlines are similar to those of monoclinic augite, being eight-sided figures, with a distinct cleavage parallel to what may be taken as the prism. The deviation of the angle of extinction from the normal one for monoclinic minerals is *not* constant. Very many of the crystals are apparent twins, and the twinning plane bisects the prism angle in all observed cases.

For convenience, it will be assumed that this plane is the macropinacoid, in accordance with the common law of augite. The divergence of the direction of total extinction from this assumed macrodiagonal is in most cases 20° to 25°, but cases are not rare of its exceeding this average up to 38° 30′ as observed maximum. It is more often above 25° than below 20°. It is not uncommon to find several angles of extinction indifferent portions of the same cross-section. This will be best understood by a reference to the figures of Plate II.

Plate II.—Fig. 1 represents a section with partially regular outline,

and a cleavage most pronounced in two directions, cutting each other at an angle of nearly 90°. In ordinary light it seems like a simple section of pale augite. In polarized light it appears at first to be a trilling whose composition face is ∞ P ∞. On determining the direction of total extinction, the (in figure) upper and lower portions are found to agree with an angle of 27° 30′ from the assumed macrodiagonal. The central portion, however, has an angle of extinction of 10° 30′, cutting the macrodiagonal in corresponding direction with the preceding. Its relations to the other portions are, therefore, not those of a plate in true twinning position. Moreover, within the central portion, is a small irregular patch, with cleavage parallel to that of the rest, having a third angle of extinction, viz, 6° 30′, and also in the same general direction.

The phenomenon is hence to be regarded as an intergrowth of substances with common crystallographic, but differing optical orientation. The central portion shows brilliant colors of polarization in certain po sitions, while the other parts vary only in degrees of light and shade.

In Fig. 2, the extinction of several parts is, as indicated, with angles of 19° 30′ and 37°. In this case, however, the parts are related as in a trilling crystal, the direction of extinction of the central portion cutting the macrodiagonal in the manner necessary had there been a revolution of 180° about the normal to the macropinacoid. The parts with extinction of 19° 30′ polarize somewhat more intensely than the others.

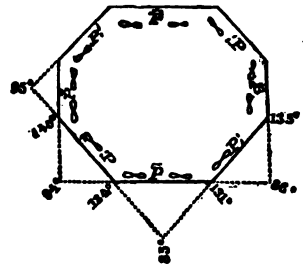
Fig. 3 shows a crystal 0.16^{mm} in diameter, with twin structure, the angles of extinction being respectively 24° and 29° for the two halves. The former gives more brilliant colors in polarized light.

Many small sections are very similar to Fig. 4, with about the same angle of extinction. Fig. 6 represents an apparent intergrowth of rhombic and triclinic pyroxene. The rhombic character is not demonstrable of course, but it seems most probable, as the intergrowth of hypersthene and other pyroxene in prismatic sections is often visible. (See Fig. 5.) The hypersthene polarizes brightly, while the other mineral neither gives distinct colors nor becomes very dark in any position between crossed nicols, so that its nature cannot be determined.

Although measurements of crystal angles made on chance sections in a slide of a fine-grained rock cannot, from the nature of the case, be accurate, an attempt was made to determine approximately the chief angles of the prismatic zone of this questionable mineral. As far as could be judged the section of Fig. 1 was cut very nearly at right angles to the vertical axis, and its bounding planes were sharply defined. The angle *b* of upper right-hand quadrant was first determined. The mean of several measurements, taken in different ways, was almost exactly 140°. To obtain the angle *a*, a measurement from ∞ P̆ ∞ to the plane of intergrowth was made, as ∞ P ∞ was not well defined; 134° was the result within a few minutes. The angle of the two pinacoids was next measured at 94°, which would be necessary for the two pre-

ceding determinations. The angle *a* was determined as a mean of several trials at 134° 47′, the prism angle between faces on right-hand of section = 95° (nearly).

A section of the prism of this mineral, at right-angles to the vertical axis, would therefore have the accompanying form:



The figures of the plate will be seen to have a very similar form. If the sections Figs. 2 and 3 were of normal twins, according to a pinacoid face, there should be a re-entering angle visible, in case the above measurements are correct. On some of the sections seen, this seemed to be actually the case, but they were too small and indistinct to admit of measurement.

In some of the cross-sections the cleavage is apparently better developed parallel to one of the prismatic directions than to the other; for example, see Fig. 1; but this difference is very slight, and no weight can be laid on it.

TRICLINIC PYROXENE IN OTHER ROCKS.

The writer has noticed, and briefly described, an apparent triclinic pyroxene in certain crystalline schists in Brittany.[1] The phenomenon was there less distinct than in the present case, and it was then thought probable that it was an anomalous optical action of the monoclinic augite, the cause of which was unknown. No twin structure or intergrowth was there noticed, and the divergence of the direction of extinction from the normal one was even more variable than in the case in hand. The material, too, was less favorable for accurate observation, yet the two instances are so similar that in all probability they are due to the same cause.

A third occurrence of this same phenomenon has been observed by the writer in a feldspar basalt from Grand River, above the Hot Springs, Middle Park, Colorado. Mr. S. F. Emmons, in passing through the Park, collected specimens of several basalts, and one of them shows, under the microscope, a pyroxene seeming in ordinary light typical of the normal augite of such rocks. It is not pleochroic to any describable degree. Its cross-sections are eight-sided figures, with a strongly marked cleavage. Fig. 7, Plate II, represents a cross-section of a twin

[1] W. Cross: "Studien über bretonische Gesteine." Min. und pet. Mittheilungen. G. Tschermak, (Neue Folge), III, p. 396.

crystal observed in this basalt. The angles of extinction for the two halves, 19° and 22° from twinning plane, are perhaps within the limits of possible error of observation in a section whose exact position cannot be determined. All other cross-sections show similar relations, but the angle of extinction varies from 18° to 33° from a diagonal of the prism. In longitudinal sections the action is normal.

The finding of pyroxene with such abnormal optical properties in three distinct rocks, from such widely separated localities, led naturally to the examination of the pyroxene in the common augite rocks, such as diabase, basalt, &c. The result of such examination is to show that even in well-known rocks a portion of the pyroxene does not exhibit in polarized light the properties required of a monoclinic mineral. In many cases, sections of the supposed augite, which, from all available data, seemed to be cut very nearly at right angles to the vertical axis of the crystal, were found to act abnormally between crossed nicols. A number of instances are given below, mainly from well-known European localities, where this abnormal action was noticed. In each of these rocks, at least one section of pyroxene was found, which, without examination in polarized light, would be considered, as determined by the following tests, to be a typical cross-section of augite. In the first place, if, in a given rock, the pyroxene was found to possess a prismatic development, an eight-sided figure with the proper angles was required. Parallel to two of these outlines there must be a very distinct cleavage, the angles formed by cleavage planes being measurable at very near 87° and 93°. By means of the micrometer screw, it could be shown in each case that the cleavage plane lay nearly or quite parallel to the axis of the microscope.

In each of the rocks mentioned below, a section of apparent augite, determined, as above, to be nearly or quite perpendicular to the vertical crystallographic axis, was found to extinguish light between crossed nicols at a very decided angle from the diagonals of the prism. In all cases cited, the section was clear, fresh, and free from all visible disturbing elements. In a few cases, where the maximum of darkness was not very distinct, the interference cross of the calcite plate and the most sensitive colors produced by the quartz plate were used in the determination.

The instances referred to are as follows:

1. *Diabase.*—Ilkendorf, near Nossen, Saxony.
2. *Diabase.*—Near Elbingerode, Hartz Mountains, Germany.
3. *Diabase.*—Burg in Nassau, Germany.
4. *Olivine-diabase.*—Björfvas, Dalarne, Sweden.
5. *Melaphyre.*—St. Wendel on the Nahe, Germany.
6. *Hornblende-andesite.*—Bolvershahn, Siebengebirge, Germany.
7. *Hornblende-andesite.*—Jakuben, near Tetschen, Bohemia.
8. "*Augite-andesite.*"—Mount Cotopaxi, Ecuador, South America.

9. "*Dolerite.*"—Löwenburg, Siebengebirge, Germany.
10. "*Dolerite.*"—The Meissner, Hessen, Germany.
11. *Feldspar-basalt.*—Bildstein, Vogelsberg, Germany.
12. *Feldspar-basalt.*—Holmestrand, Sweden.
13. *Nephelinite.*—Meiches, Vogelsberg, Germany.
14. *Feldspar-basalt lava.*—Mount Ætna, eruption of 1537.
15. *Nepheline-basalt.*—Robschitz, near Bilin, Bohemia.
16. *Nepheline-basalt.*—Herchenberg, Laacher See, Germany.
17. *Leucite-basalt.*—The Abtei, Laacher See, Germany.
18. *Leucite-basalt.*—Veitskopf, Laacher See, Germany.
19. *Leucite-basalt.*—Niedermendig, Laacher See, Germany.
20. *Haüyne-basalt.*—Cranzahl, Saxony.
21. *Leucite lava.*—Mount Vesuvius, old eruption.

In very many other cases the same behavior was noticed, but less decidedly. Especially in comparison with the hornblende of diorite, porphyrite, &c., is the abnormal behavior of pyroxene noticeable.

So far as is known to the writer, this abnormal action of supposed augite has never been dwelt upon, if indeed it has been noticed at all. None of the available material contains the questionable mineral, in size or perfection, suitable for isolation and crystallographic investigation; hence the correctness of the view here advanced, that it is triclinic, cannot be proven. The only other explanation possible is that of an "optical anomaly."

If this mineral be triclinic in crystallization, it is manifestly different from either Babingtonite or Szabóite, the only known triclinic pyroxenes, and forms a new species, whose chemical composition does not, in all probability, vary greatly from that of common augite. The variations in optical behavior suggest an analogy with the triclinic feldspars.

Whether the observed behavior be finally explained in accordance with the hypothesis here advocated or not, an interesting and important subject for further investigation is certainly indicated.

CHEMICAL COMPOSITION OF THE ROCK.

The rock selected for chemical analysis is that occurring in place on the northeast shoulder of the main Buffalo Peak. (Coll. No. 144.) For a description of its structure and constituents see page 19. The rock was very fresh, and the minerals recognized in it are plagioclase, two pyroxenes, magnetite, and a little apatite. Between these is a brownish glassy base.

The specific gravity was taken at a temperature of 16° C. The analy-

sis was made by Mr. W. F. Hillebrand, chemist to the Rocky Mountain Division of the Survey.

Specific gravity	2.742
SiO_2	56.190
Al_2O_3	16.117
Fe_2O_3	4.919
FeO	4.433
MnO	trace
CaO	6.996
BaO	trace
SrO	trace
MgO	4.601
Na_2O	2.961
K_2O	2.368
H_2O	1.028
P_2O_5	0.266
Cl	0.022
	99.901

There is but little in the analysis which requires special explanation. The percentage of K_2O is considerably larger than would be expected, as none of the larger crystals of feldspar can be considered as sanidine. The amount of P_2O_5 found, with the Cl, indicates that minute needles of apatite must be quite abundant in the groundmass, though but few can be recognized as such. BaO and SrO are seldom given in analyses of andesites—probably, in many cases, because they were not sought for.

ISOLATION AND ANALYSIS OF HYPERSTHENE.

In order to establish the identity of the pyroxene, which seemed from its optical behavior to be rhombic, an attempt was made to isolate the same for analysis. It is scarcely necessary to mention in this connection that the desire to compare the Buffalo Peaks rock with the hypersthene-bearing andesite of the volcano of Santorin in the Grecian archipelago led to the chemical investigations which follow; and it may be safely assumed that the chief results of the investigations of Fouqué on the Santorin lavas are known even to those to whom the final volume, with its wealth of minute observations and splendid illustrations, is not accessible.[2]

INVESTIGATIONS OF FOUQUÉ ON THE LAVAS OF SANTORIN.—Fouqué found that the lava of the eruption of 1866, which at first glance seemed a typical augite-andesite, contained in reality two pyroxenes, which he isolated and determined as normal augite and *hypersthene*. He also found hypersthene in older rocks of this same volcanic group. It is the first

[2] F. Fouqué, "Santorin, et ses éruptions", Paris, 1879.

instance where the presence of a rhombic pyroxene in "augite-andesite" has been chemically and optically proved beyond dispute.

As the so-called Thoulet solution of the iodide of mercury in the iodide of potassium was not available at the time the investigations were in progress, recourse was had to the method employed by Fouqué (*l. c.*, p. 190) in separating the iron-bearing minerals of the Santorin lavas from the other constituents.

METHOD USED IN ISOLATION OF HYPERSTHENE.—A specimen of the rock was crushed until all passed through a sieve containing sixty meshes to the inch. Only that portion of the powder was used which was retained by a sieve having eighty meshes to the inch, as uniformity in size of the grains acted upon by the acid is desirable, and the finer powder is objectionable on several accounts (see Fouqué, *l. c.*). The grains thus obtained were placed in a platinum dish, and treated with strong fluorhydric acid, which attacks first the feldspars and other substances free from or poor in iron. According to Fouqué, concentrated acid is best, in which case, in pouring the powder, little at a time, into the acid, there is a more or less violent ebullition without the application of external heat. On the ceasing of this ebullition it may be presumed that a large part, if not all, of the easily attacked minerals is dissolved. The action is stopped by dilution with water. If matter still remains which it is desired to remove, the water is poured off and the powder treated again with acid. In the present case the acid was not concentrated, and hence considerable heating was necessary. In all cases the powder should be rapidly stirred with a platinum spatule. On discontinuing the action of the acid, there is always more or less gelatinous silica deposited upon the remaining grains. This is removed by repeated washings and rubbing of the powder under water with the finger. The magnetite is then separated with a small magnet.

A specimen of the Buffalo Peaks rock (Coll. No. 144) of which the complete analysis was made, treated as above at different times, yielded a powder in which there were only a few white grains remaining. The acid did not seem to attack them very readily, and before they entirely disappeared a considerable portion of the pyroxene was also dissolved. The residue was finally obtained quite pure, and yielded upon analysis the results under I and II below. Fouqué found (*l. c.*, p. 195) that if the mixture of augite and hypersthene derived from the Santorin lava were further treated with fluorhydric acid, the augite was much more easily attacked, as it contained less iron, and that he could in this way finally obtain hypersthene with but little admixture of augite. In the present case the microscope showed a large amount of augite with the rhombic mineral, in the rock section, but the analysis shows the substance analyzed to have been nearly pure hypersthene; hence, it is presumable that the quantity of pyroxene which was dissolved in removing the white grains above referred to must have been chiefly augite. Microscopic examination of

material left in Analysis I (which has been made since this was written), after the feldspar had disappeared, showed a decided admixture of augite with hypersthene; the augite was, however, removed by further treatment with acid.

Another specimen from the Buffalo Peaks, from a boulder in the tufa beds (Coll. No. 150), was treated in the same manner. This rock was chosen because the microscope showed a large amount of very pure rhombic pyroxene and but little augite. The powder obtained was examined with the microscope and found to be almost absolutely free from impurities. Its analysis is given under III.

MICROSCOPIC INVESTIGATION OF ISOLATED MATERIAL—The microscopic study of the isolated crystals and fragments shows clearly the rhombic nature of the mineral in question. The crystals obtained are often 0.3^{mm} in length, and 0.15^{mm} in thickness. In all those suspected of being rhombic, the pleochroism is much stronger than has been described for the sections observed in the slide. (See p. 21.) The changes in color are from a dark reddish-brown to a very distinct green, instead of from greenish-yellow to pale green. Every such prism extinguishes light, parallel to the vertical axis. The grains of augite are more of a bottle-green color, and only very faintly pleochroic. In the material obtained from specimen (Coll. No. 150) affording III, probably not more than one per cent. of the grains are augite. Many prisms are quite perfect, and it would not be at all difficult to isolate a large number of little crystals of almost the exact appearance of those reproduced by Fouqué in Plate LX, Fig. 2, of his previously cited work. The crystals in the Buffalo Peaks rock are usually stouter than most of those pictured by Fouqué, but are quite as regular in form. Fig. 9 of Plate II shows a crystal from the thin section of the rock which furnished the material for Analysis III.

ANALYTICAL TABLE.—For comparison, the composition obtained by Fouqué for the hypersthene of the Santorin lava of 1866 is given under IV; under V the analysis of the "augite" from the "augit-andesit" of the highest peak of the "Sierra de Mariveles" in the island of Luzon, given by Oebbeke;[3] and under VI, the analysis by Damour of the well-known hypersthene from St. Paul's Island, on the coast of Labrador, as given by Dana.[4]

The isolation of the hypersthene, and Analyses III and III, were carried out by Mr Hillebrand.

[3] K. Oebbeke, Neues Jahrbuch, etc., I Beilage Band., p. 451 (1881).
[4] J. D. Dana. A System of Mineralogy, fifth edition, p. 210.

ANALYSES.

	I.—Buffalo Peaks.	II.—Buffalo Peaks.	III.—Buffalo Peaks.	IV.—Santorin.	V.—Luzon.	VI.—Saint Paul's.
Sp. Gr.	.....	.....	3.307	3.477	.....	.....
SiO_2	51.703	51.157	50.043	50.12	51.50	51.36
Al_2O_3	1.720	2.154	2.906	2.12	3.80	0.37
Fe_2O_3	0.304	.....	.....	1.60	2.80	.....
FeO	17.995	18.360	17.812	23.59	10.66	21.27
MnO	0.363	0.363	0.120	.....	0.75	1.32
CaO	2.873	3.812	6.696	10.49	10.45	3.00
MgO	25.001	24.251	21.744	11.05	19.69	21.31
Na_2O	.....	.....	0.274	0.67	.....	.....
	100.049	100.097	99.595	99.64	99.65	98.72

The specific gravity of III was taken at 23° C.

DISCUSSION OF ANALYSIS.—In I and II the alkalies were not tested for, and in II and III all the iron is given as FeO, because the special determination of the protoxide was not successful. The amount of Fe_2O_3 present, is in all probability about the same as in I. The amount of iron derived from grains of magnetite included in the pyroxenes of II and III is small. The crystals are unusually free from inclusions of all kinds. The M_nO of II is taken from I, and is undoubtedly very nearly correct, the portions analyzed being derived from the same rock. In III is included a small amount of feldspar attached to hypersthene grains, and which could not be dissolved without losing too much of the latter mineral.

On comparing II and III with the other analyses of the table, it is clear that they are much nearer to typical hypersthene (VI) in composition than the rhombic mineral of the Santorin lava, whose identity with hypersthene has been recently admitted, even by Rosenbusch,[5] who had at first expressed doubts upon the subject.[6] The varying quantities of CaO in I, II, III, and IV may indicate that the simple silicate, $CaSiO_3$, enters more largely into the composition of rhombic pyroxene, as occurring in rocks, than has heretofore been supposed.

The only instance since the work of Fouqué, known to the writer, where the pleochroic pyroxene of an "augite-andesite" has been isolated and examined with regard to its crystal system, is in the case of the rock from the Sierra de Mariveles, which was investigated by Oebbeke (*l. c.*), and which gave Schwager the composition V of the table. Oebbeke finally pronounces the mineral to be augite and not hypersthene. In this case, as in those mentioned later (p. 34), the grounds given for the determination are by no means satisfactory. The only *evidence* given by Oebbeke in favor of the monoclinic system is the following:

[5] Review of Fouqué's work on Santorin, in Neues Jahrbuch, etc., 1880, II, p. 310.
[6] Rosenbusch, Massige Gesteine, p. 418.

He examined a few of the isolated pleochroic prisms by attaching them singly to a piece of wax in such a manner that he could test the direction of extinction parallel to each face of the prismatic zone, and in each crystal examined he found oblique extinction in some position. The writer found, on examining the material which furnished Analysis III, that many pleochroic prisms did not give definitely an extinction parallel to the vertical axis when lying loosely on an object glass in air; but that the same grains mounted in balsam were much more clear and distinct in their optical behavior, and always in favor of the rhombic system. In the case of such tiny grains, especially when obtained by the crushing of rock to powder, the examination of optical properties in the air is very unsatisfactory. The reflection of light from uneven surfaces, the disturbing influence of fissures, of included substances, &c., all tend to make the optical examination of minute particles in air unreliable. If mounted in balsam, the liability to error is much less.

The substance which yielded the composition V was isolated by means of the Thoulet solution, and would represent a mixture of rhombic and monoclinic pyroxenes, were both present in the rock. The figures of V are certainly abnormal for any augite known to occur as a rock constituent, but are easily explained on the supposition of a mixture of augite with a bronzite or hypersthene.

CHAPTER II.

RHOMBIC PYROXENE IN OTHER ANDESITES.

The resemblance of the Buffalo Peaks rock to that variety of augite-andesite which has always been regarded as most typical, naturally demanded that all available examples of the latter should be examined in regard to the character of the pyroxenic constituent. The particular variety referred to is that characterized by a glassy base, often brownish in color, in which lie a multitude of minute microlites of plagioclase and pyroxene, with magnetite grains. The same minerals occur in porphyritic individuals, though by no means so prominently as in other varieties of andesite. Hornblende and biotite are often entirely wanting and are rarely abundant. Olivine appears occasionally. This variety is especially abundant in Hungary, Transylvania, and Servia.

As many of the rocks examined come from well-known European localities, the observations in each particular case will be concisely given. Unfortunately, only their sections; without hand specimens, were available.[7]

In each section the attempt was made to observe and record the direction of total extinction in every prismatic section of pyroxene of sufficient size to allow exact determination.

TABULATED RESULT OF OBSERVATIONS ON AUGITE-ANDESITES.—The ratio of prismatic sections with rhombic, to those with monoclinic optical orientation, was found to be in the rock from:

(1) Bohunitz, near Schemnitz, in Hungary ..... as 8 : 2
(2) Podhrad, near Schemnitz, in Hungary ..... as 15 : 5
(3) Bagonya, near Schemnitz, in Hungary ..... as 13 : 6
(4) "Gönczer Thal," near Schemnitz, in Hungary ..... as 21 : 1
(5) Ober Fernezely, northeast from Nagy-Banya, Hungary .... as 15 : 2
(6) Roszaj-Ingnies, northeast from Nagy-Banya, Hungary .... as 8 : 5
[8](7) Southeast of Rank, Abanjer Comitat, Hungary ..... as 47 : 11
[8](8) Magos Ter, Abanjer Comitat, Hungary ..... as 43 : 17
[8](9) Between Tuhrina and Czervenicza, Saroser Comitat, Hungary ..... as 24 : 6

[7] For Nos. 1, 2, 3, 4, 5, 6, and 13, the writer is indebted to Prof. F. Zirkel, of Leipzig. Nos. 10, 11, and 12 are contained in the "Sammlung No. 6, von typischen vulkanischen Gesteinen aus Ungarn und Serbien," prepared and sold by R. Fuess, in Berlin. The material is said to have been selected and described by Prof. J. Szabó, in Budapest.

[8] Nos. 7, 8, and 9 are rocks sent by the "K. K. geologischen Reichsanstalt" of Austria to the United States Geological Survey of the Fortieth Parallel, and were kindly

(10) Tokajer Berg, Northeastern Hungary.....	None distinctly monoclinic could be found.
(11) Lorinczi, Mátra Gebirge, Central Hungary.....	
(12) Borač, Southern Servia	
(13) Mount Cotopaxi, Ecuador, South America.....	as 10 : 5

DISCUSSION OF TABLE.—In Nos. 4, 5, and 6, only the larger sections were counted. There are many of about 0.4^{mm} to 0.5^{mm} in length, all of which extinguish light parallel to the vertical axis.

The few sections in which the optical behavior was not distinct were neglected.

The microlites of pyroxene, in cases where they could be tested, seemed for the most part to be monoclinic, but the determination was seldom satisfactory.

It appears, therefore, that in all those cases mentioned above, a rhombic pyroxene is much more abundant in porphyritic individuals than augite. For it cannot be supposed that such constant results could be obtained through mere chance. It is true that sections of augite parallel to the orthopinacoid are not to be distinguished optically from rhombic pyroxene, but it is not possible to explain the above figures in that way.

The same difference in appearance between the two pyroxenes is to be noticed in the above rocks which was described in the case of the Buffalo Peaks andesite. The rhombic mineral is pleochroic in the same manner (p. 21), while the monoclinic is not noticeably so. There is also a difference in development. The rhombic pyroxene, which, through analogy with the cases described, will be hereafter designated as hypersthene, is better developed than the augite. Its crystals show terminations as if from domes quite frequently, and its cross-sections are sharper, being chiefly bounded by pinacoidal outlines. The augite grains are much more irregular as a rule, and contain glass and magnetite inclusions in greater abundance than the hypersthene crystals. An apparent intergrowth of the two was not unfrequently noticed, as in the rocks from Bohunitz and Roszaj-Ingnies.

AUGITE-ANDESITES OF THE 40TH PARALLEL.—Through the courtesy of Mr. Arnold Hague the slides of the andesitic rocks collected during the geological exploration of the Fortieth Parallel, and which have been described by Prof. F. Zirkel,[9] were placed at the disposal of the writer. The results obtained from the examination of these slides agree fully with what has been stated concerning the European rocks. In all but two of those rocks described by Professor Zirkel as "augite-andesites" a very large part of the pyroxene seems identical

loaned to the writer by Mr. Arnold Hague, United States Geologist, the custodian of the collections belonging to the Fortieth Parallel Survey. The rocks bear respectively the numbers 24, 25, and 19 of the Austrian Survey, and are labeled "Grauer Trachyt, Richthof." They are all typical rocks, in fresh condition, of the class under discussion.

[9] F. Zirkel, Microscopical Petrography. Washington, 1876, p. 221.

with that which is regarded as probable hypersthene in the above rocks. The two exceptions (Mic. Nos. 514 and 515) are basaltic in habitus and carry olivine.

PREVIOUS OBSERVATIONS OF RHOMBIC PYROXENE IN AUGITE-ANDESITES.

HISTORICAL.—The number of instances known to the writer where the presence of rhombic pyroxene in "augite-andesites" has been at all emphasized is extremely small. J. Niedzwiedski[10] described in 1872 a rock from St. Egidi, in Steiermark, as "Hypersthen-Andesit." In 1877 this rock is mentioned by Rosenbusch[11] as the single rock known which can bear that name. In 1880 E. Hussak[12] pronounced it an ordinary augite-andesite, and, so far as the writer is aware, his verdict has not been questioned. Reference will again be made to this case later.

The occurrence of rhombic pyroxene even as an accessory constituent of augite-andesites has been but rarely announced.

R. von Drasche[13] has mentioned bastite as occurring in augite-andesite from Videna, in Steiermark.

Rosenbusch[14] at the time of issuing his often cited work (1877), while not denying that a rhombic pyroxene may occur in augite-andesites, is still inclined to consider those pleochroic prismatic sections of pyroxene in which light is extinguished parallel to the vertical axis, as chance sections of augite parallel to the ortho-pinacoid. It is in great measure owing to this judgment, no doubt, and to the undoubted presence of pleochroic augite in recent rocks, that many observers have seemed to dismiss all thoughts of rhombic pyroxene if in the same slide with pleochroic sections, such as have been described, normal augite with its oblique extinction could be found. Thus, E. Hussak (*l. c.*) disposes of the hypersthene andesite of Niedzwiedski with the simple assertion that the pyroxene is monoclinic, because he has found apparent prismatic sections in which extinction took place at more than 30° from the vertical axis. Inasmuch as he had previously confirmed the statements of von Drasche[15], it seems highly probable that augite is not specially abundant in this andesite.

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[10] J. Niedzwiedski, Tschermak's Min. und pet., Mittheilungen, IV, 1872, p. 253.
[11] H. Rosenbusch, Massige Gesteine, p. 480.
[12] E. Hussak, Neues Jahrbuch für Mineralogie, etc., 1880, I. p. 289.
[13] R. von Drasche, Tschermak's Min. und pet. Mitth., 1873, V. p. 1.
[14] H. Rosenbusch, Massige Gesteine, p. 411.
[15] E. Hussak, Verhandl. d. k. k. Geol., Reichsanstalt, Vienna, 1878, p. 338.

Hussak[16] has also published the results of microscopic investigations on the eruptive rocks of the region about Schemnitz, in Hungary. While the rocks of this district have been frequently studied by eminent investigators, such as Zirkel, vom Rath, and Doelter, the publication of Hussak is here considered as the most recent known to the writer. Augite-andesite, of the type especially under consideration, is very abundant near Schemnitz. Hussak mentions a large number of occurrences, among them those of Bohunitz and Podhrad, and the great similarity of most of them is evident. The pyroxenic constituent is always called augite, although some of it extinguishes light parallel to the vertical axis. Decomposition products resembling bastite were also noticed. The pleochroism is quite strong and the pinacoids are markedly predominant. The angle of extinction in two cases is given as 47° and 48°.

The general description given by Hussak corresponds closely to that required by the two slides in possession of the writer, from Podhrad and Bohunitz, except that no allowance is made for two species of pyroxene.

The short description accompanying the slides of the Fuess collection (see p. 31) mentions no other pyroxene than augite, even in those cases where every prismatic section seems to be rhombic.

The determination of hypersthene in the lavas of Santorin, and the statements of Oebbeke concerning the pyroxene in the "augite-andesites" of the Philippine Islands, have already been cited. (p. 29.)

In all other descriptions of or references to augite-andesite of the chief type which have come under the observation of the writer, it is impossible to obtain satisfactory data concerning the pyroxene. In nearly all of them, however, the pleochroism and predominance of the pinacoids are dwelt upon, which, in the light of the present investigation, justifies the suspicion that rhombic pyroxene is not wanting. Two instances will be given where the existing descriptions of "augite-andesites" suggest the identity of the supposed "augite" with the rhombic pyroxene of the rocks here described.

Rosenbusch[17] mentions that the augite of the "augite-andesites" from Chimborazo and Tunguragua, in the Andes of South America, is strongly pleochroic. Artopé[18] has given analyses of several augite-andesites from the Andes, among them being two from Tunguragua. One of these shows nearly 6 per cent. MgO, while in two other cases nearly 4 per cent. MgO is given. The augite-andesite from Cotopaxi, examined by the writer, showed 10 apparently rhombic pyroxenes to 5 monoclinic.

Again, Cohen[19] describes the porphyritic augite crystals of two Ha-

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[16] E. Hussak, Sitzungsbericht d. k. Akad. d. Wiss., Vienna, July, 1880, p. 164.

[17] Rosenbusch, Massige Gesteine, p. 420.

[18] Artopé, "Über augithaltige Trachyte der Anden," 1872. Göttingen.

[19] E. Cohen, "Über Laven von Hawaii," etc., Neues Jahrbuch, etc., 1880, II, pp. 38 and 54.

waiian andesites as "*kräftig pleochroitisch*" in the same manner shown in the Buffalo Peaks hypersthene, while the microlites in the groundmass do not seem to be so. Also, the augite of an "*Augitandesitbimstein*" found between New Britain and New Ireland, in the South Pacific Ocean, is strongly pleochroic in the same manner.

RHOMBIC PYROXENE IN DIABASIC ROCKS.

The possibility that a rhombic pyroxene may occur in some augite-andesites has been admitted by Rosenbusch,[20] who, while denying that the pleochroic pyroxene, so common in augite-andesites, is rhombic, expresses a belief that the final discovery of a rhombic pyroxene in a subgroup of the augite-andesites is even highly probable. This probability arises out of analogy with the diabase-porphyrites of the left bank of the Lower Rhine, which contain enstatite. It is interesting and significant that this analogy is borne out in Colorado.

ENSTATITE-BEARING DIABASE FROM COLORADO.—At Morrison, near Denver, there is in the Archæan gneiss a narrow dike of a dark aphanitic rock. Under the microscope this rock is seen to consist chiefly of narrow prisms of plagioclase and a colorless pyroxene. The angular spaces between these are filled in part with a colorless anisotropic mineral, which may be orthoclase, and with a dark groundmass. The ore is apparently magnetite, and is almost exclusively confined to the groundmass, where it occurs in regular aggregations, and seldom in single grains. These aggregations seem often like devitrification products, and a glass base is in places to be identified. The pyroxene occurs chiefly in prisms of about 1^{mm} in length by 0.2^{mm} in thickness. All such individuals are colorless, have numerous cross-fissures, and extinguish light when the vertical axis is parallel to the principal section of one of the crossed nicols. The cross-sections show a dominant development of the pinacoids. The cleavage is most pronounced parallel to the prism, but there are many irregular fissures, and some parallel to the pinacoids.

The absolute identity of this mineral with enstatite has not been proven, but there seems to be no good reason for doubting it. The remaining pyroxene is in smaller prisms and has a very slight pinkish color. Nearly all of these prisms have an angle of extinction exceeding 30°, and they belong undoubtedly to augite.

The age of this rock cannot be determined, but it has throughout the habitus of a Pre-Tertiary eruptive.

RHOMBIC PYROXENE IN HORNBLENDE-ANDESITE.

The presence of a rhombic pyroxene in the hornblende-biotite-andesites has been seldom announced.

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[20] Rosenbusch, Massige Gesteine, p. 411.

Rosenbusch[20] found it in one dacite; Lagorio[21] found pyroxene in certain andesites of the Caucasus which acted optically like a rhombic mineral, yet he does not pronounce it such.

In the hornblende-andesite from Buffalo Peaks, pyroxene, wholly analogous to that of the hypersthene-andesite, is quite abundant. In the tufas of the same locality hypersthene is often associated with hornblende and biotite.

A slide in the possession of the writer, from Moisar (Mocsar?), in Hungary, shows hornblende, biotite, and apparent hypersthene. The groundmass of this rock is much less prominent than in the typical "augite-andesites," yet seems to be essentially of the same character, and the occurrence may represent a transition form.

The Fuess collection (see note, p. 29) contains two beautiful hyaline andesites from Gorni Milanovatz, and Slatni, in Central Servia, in which the pyroxene seems to be rhombic, with scarcely an exception. Hornblende and biotite are abundant in the same. On the other hand, the pyroxene in the andesite from Jakuben, near Tetschen, in northern Bohemia, though strongly pleochroic, is still unmistakeably augite. The pleochroism of this augite is, however, very different from that which is characteristic of andesitic hypersthene. Augite, sometimes faintly pleochroic, can often be found in andesites and trachytes of the Siebengebirge, the Auvergne, and other districts, but in these cases sections with rhombic optical action are very rare and cannot be considered as indicating a rhombic mineral.

CLASSIFICATION OF ANDESITIC ROCKS.

NEED OF A RECLASSIFICATION.—The group of the andesites, including all Tertiary eruptive rocks with plagioclase and one or more of the minerals hornblende, biotite, or pyroxene as essential constituents, is more in need of a natural subdivision than any other in the category of modern petrography. This statement will hardly be disputed.

The division into hornblende and augite-andesites has often been assailed, with justice, on the ground that very many rocks contain hornblende and augite in about equal quantity, making the transition stage of as frequent occurrence as either of the extremes. On the other hand, the division of the augite-andesites has been justly defended, by pointing to the "original," or the typical rock, in which hornblende and biotite seldom play any other than a very subordinate part, and which has been

[20] Rosenbusch, Massige Gesteine, p. 300.

[21] A. Lagorio, "Die Andesite des Kaukasus," Dorpat, 1878, p. 18.

found in widely separated parts of the world, with a truly remarkable persistence of characteristics.

A glance at the rocks which, according to the prevailing principles of classification, must be called augite-andesites, shows three subdivisions. At one extreme are those rocks upon whose characteristics the objections to the prevalent classification are grounded. These occurrences, united with the great majority of hornblende-biotite-andesites are usually characterized by a trachytic habitus. In these, feldspar is by far the dominant element, and often sanidin forms an important part of it. The structure of the groundmass is prevailingly much more crystalline than in the so-called augite-andesites proper, and plagioclase is especially abundant in it. Quartz or tridymite is often present.

At the other extreme are the rocks, comparatively few in number, which, though possessing the basaltic habitus, are still strictly andesites through the absence or rarity of olivine. As examples of this class may be cited numerous rocks of the Auvergne described by von Lasaulx,[22] and the rock from the Löwenburg in the Siebengebirge, commonly called "dolerite," but classified by Rosenbusch[23] with the augite-andesites. Between these are the normal "augite-andesites."

Chemically considered, the andesites with trachytic habitus are somewhat different from the normal augite-andesite. The percentage of silica is noticeably higher. Thus Lagorio[24] states concerning the andesites of the Caucasus that they vary in amount of silica from 61.33 to 77.40 per cent. Doelter[25] gives the variation in quartz-bearing andesites of Transylvania and Hungary as from 57 to 69 per cent. The typical augite-andesites seldom contain more than 60 per cent. silica, and the average runs quite constantly between 56 and 58 per cent.[26]

The separation of the normal augite-andesites from those with trachytic habitus has often been justified by their geognostic relations. Near Schemnitz, in Hungary, where both types are abundantly represented, the augite-andesites proper were long ago distinguished as "*trachytes semivitreux*" by Bendant. Von Andrian states as a result of the geological survey of the region in 1865, speaking of the "*jüngere andesite*," that "*Übergänge in den (amphibol-) andesit lassen sich auch da, wo beide neben einander vorkommen, nicht nachweisen.*" (Cited as above by Hussak (*l. c.*).) In many other places the normal augite-andesite has been distinguished from the "trachytic" variety, as younger.

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[22] A. v. Lasaulx, Neues Jahrbuck für Min., etc., 1870, p. 693, and 1871, p. 673.

[23] Rosenbusch, Massige Gesteine, p. 416.

[24] A. Lagorio, "Die Andesite des Kaukasus," Dorpat, 1878, p. 13.

[25] C. Doelter, Tschermak's Min. und pet. Mitth, V. 1873, p. 51.

[26] F. Zirkel, Mic. Pet. of 40th Par., p. 222; also the well-known tables compiled by J. Roth.

RESULTS.

1. An apparently typical augite-andesite from the Buffalo Peaks is found to contain *hypersthene* as its chief pyroxenic constituent.

2. The remaining pyroxene of this rock must, from its optical behavior, be considered either as *triclinic* in crystallization, or as augite with anomalous action through some unexplained cause. The occurrence of apparent twins and of intergrowth with hypersthene render the *former* explanation most plausible. Pyroxene with similar behavior was found in many well-known augitic rocks.

3. In all so-called "augite-andesites" of the truly typical character which are accessible to the writer, twenty-eight in number, the greater part of the pyroxene corresponds optically and structurally to the hypersthene of the Buffalo Peaks rock.

4. There is nothing in the current description of the "augite-andesites" referred to, which can be regarded as *positive* evidence that hypersthene is not abundant in them.

5. In all so-called "hornblende-andesites" with a structure similar to that of the typical "augite-andesites" which were examined, some fifteen in number, the same apparent hypersthene is more or less abundant.

6. The pyroxene of those andesites with "trachytic habitus" seems to be normal augite.

7. The conclusion is that the chief subdivision of the augite-andesites may much more properly be called *hypersthene-andesite*. To this latter group are to be added certain rocks containing hypersthene, which have been classed with the hornblende-andesites. A separation of the remaining andesites into augite and hornblende-biotite bearing groups does not appear justifiable.

It does not seem probable that future investigations will show the occurrence of hypersthene to be so closely connected with a certain structural form as is indicated by the preceding observations. If, however, it should prove to be the case, the group of the hypersthene-andesites will be one of the best defined in petrography.

It is hoped that the correctness or falsity of the above conclusion will be speedily settled by other determinations of the nature of the pyroxene in the so-called augite-andesites.

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No. 2

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UNITED STATES GEOLOGICAL SURVEY
J. W. POWELL DIRECTOR

GOLD AND SILVER

CONVERSION TABLES

GIVING THE

COINING VALUES OF TROY OUNCES OF FINE METAL, AND THE WEIGHTS OF FINE METAL REPRESENTED BY GIVEN SUMS OF UNITED STATES MONEY

COMPUTED BY

ALBERT WILLIAMS, Jr.,
CHIEF OF DIVISION OF MINING STATISTICS AND TECHNOLOGY

WASHINGTON
GOVERNMENT PRINTING OFFICE
1883

GOLD.

OUNCES TO DOLLARS.

[1 ounce Troy=$20.671834.]

Ounces.	Dollars.	Ounces.	Dollars.	Ounces.	Dollars.	Ounces.	Dollars.
1	20. 671834	51	1, 054. 263534	100	2, 067. 1834	5, 100	105, 426. 3534
2	41. 343668	52	1, 074. 935368	200	4, 134. 3668	5, 200	107, 493. 5368
3	62. 015502	53	1, 095. 607202	300	6, 201. 5502	5, 300	109, 560. 7202
4	82. 687336	54	1, 116. 279036	400	8, 268. 7336	5, 400	111, 627. 9036
5	103. 359170	55	1, 136. 950870	500	10, 335. 9170	5, 500	113, 695. 0870
6	124. 031004	56	1, 157. 622704	600	12, 403. 1004	5, 600	115, 762. 2704
7	144. 702838	57	1, 178. 294538	700	14, 470. 2838	5, 700	117, 829. 4538
8	165. 374672	58	1, 198. 966372	800	16, 537. 4672	5, 800	119, 896, 6372
9	186. 046506	59	1, 219. 638206	900	18, 604. 6506	5, 900	121, 963. 8206
10	206. 718340	60	1, 240. 310040	1, 000	20, 671. 8340	6, 000	124, 031. 0040
11	227. 390174	61	1, 260. 981874	1, 100	22, 739. 0174	6, 100	126, 098. 1874
12	248. 062008	62	1, 281. 653708	1, 200	24, 806. 2008	6, 200	128, 165. 3708
13	268. 733842	63	1, 302. 325542	1, 300	26, 873. 3842	6, 300	130, 232. 5542
14	289. 405676	64	1, 322. 997376	1, 400	28, 940. 5676	6, 400	132, 299. 7376
15	310. 077510	65	1, 343. 669210	1, 500	31, 007. 7510	6, 500	134, 366. 9210
16	330. 749344	66	1, 364. 341044	1, 600	33, 074. 9344	6, 600	136, 434. 1044
17	351. 421178	67	1, 385. 012878	1, 700	35, 142. 1178	6, 700	138, 501. 2878
18	372. 093012	68	1, 405. 684712	1, 800	37, 209. 3012	6, 800	140, 568. 4712
19	392. 764846	69	1, 426. 356546	1, 900	39, 276. 4846	6, 900	142, 635. 6546
20	413. 436680	70	1, 447. 028380	2, 000	41, 343. 6680	7, 000	144, 702. 8380
21	434. 108514	71	1, 467. 700214	2, 100	43, 410. 8514	7, 100	146, 770. 0214
22	454. 780348	72	1, 488. 372048	2, 200	45, 478. 0348	7, 200	148, 837. 2048
23	475. 452182	73	1, 509. 043882	2, 300	47, 545. 2182	7, 300	150, 904. 3882
24	496. 124016	74	1, 529. 715716	2, 400	49, 612. 4016	7, 400	152, 971. 5716
25	516. 795850	75	1, 550. 387550	2, 500	51, 679. 5850	7, 500	155, 038, 7550
26	537. 467684	76	1, 571. 059384	2, 600	53, 746. 7684	7, 600	157, 105. 9384
27	558. 139518	77	1, 591. 731218	2, 700	55, 813. 9518	7, 700	159, 173. 1218
28	578. 811352	78	1, 612. 403052	2, 800	57, 881. 1352	7, 800	161, 240. 3052
29	599. 483186	79	1, 633. 074886	2, 900	59, 948. 3186	7, 900	163, 307. 4886
30	620. 155020	80	1, 653. 746720	3, 000	62, 015. 5020	8, 000	165, 374. 6720
31	640. 826854	81	1, 674. 418554	3, 100	64, 082. 6854	8, 100	167, 441. 8554
32	661. 498688	82	1, 695. 090388	3, 200	66, 149. 8688	8, 200	169, 509. 0388
33	682. 170522	83	1, 715. 762222	3, 300	68, 217. 0522	8, 300	171, 576. 2222
34	702. 842356	84	1, 736. 434056	3, 400	70, 284. 2356	8. 400	173, 643. 4056
35	723. 514190	85	1, 757. 105890	3, 500	72, 351. 4190	8, 500	175, 710. 5890
36	744. 186024	86	1, 777. 777724	3, 600	74, 418. 6024	8, 600	177, 777. 7724
37	764. 857858	87	1, 798. 449558	3, 700	76, 485. 7858	8, 700	179, 844. 9558
38	785. 529692	88	1, 819. 121392	3, 800	78, 552. 9692	8, 800	181, 912. 1392
39	806. 201526	89	1, 839. 793226	3, 900	80, 620. 1526	8, 900	183, 979. 3226
40	826. 873360	90	1, 860. 465060	4, 000	82, 687. 3360	9, 000	186, 046. 5060
41	847. 545194	91	1, 881. 136894	4, 100	84, 754. 5194	9, 100	188, 113. 6894
42	868. 217028	92	1, 901. 808728	4, 200	86, 821. 7028	9, 200	190, 180. 8728
43	888. 888862	93	1, 922. 480562	4, 300	88, 888. 8862	9, 300	192, 248. 0562
44	909. 560696	94	1, 943. 152396	4, 400	90, 956. 0696	9, 400	194, 315. 2396
45	930. 232530	95	1, 963. 824230	4, 500	93, 023. 2530	9, 500	196, 382. 4230
46	950. 904364	96	1, 984. 496064	4, 600	95, 090. 4364	9, 600	198, 449. 6064
47	971. 576198	97	2, 005. 167898	4, 700	97, 157. 6198	9, 700	200, 516. 7898
48	992. 248032	98	2, 025. 839732	4, 800	99, 224. 8032	9, 800	202, 583. 9732
49	1, 012. 919866	99	2, 046. 511566	4, 900	101, 291. 9866	9, 900	204, 651. 1566
50	1, 033. 591700	100	2, 067. 183400	5, 000	103, 359. 1700	10, 000	206, 718. 3400

SILVER.

OUNCES TO DOLLARS.

[1 ounce Troy=$1.2929.]

Ounces.	Dollars.	Ounces.	Dollars.	Ounces.	Dollars.	Ounces.	Dollars.
1	1.2929	51	65.9879	100	129.29	5,100	6,593.79
2	2.5858	52	67.2808	200	258.58	5,200	6,723.08
3	3.8787	53	68.5737	300	387.87	5,300	6,852.37
4	5.1716	54	69.8166	400	517.16	5,400	6.981.66
5	6.4645	55	71.1095	500	646.45	5,500	7,110.95
6	7.7574	56	72.4024	600	775.74	5,600	7,240.24
7	9.0503	57	73.6953	700	905.03	5,700	7,369.53
8	10.3432	58	74.9882	800	1,034.32	5,800	7,498.82
9	11.6361	59	76.2811	900	1,163.61	5,900	7,628.11
10	12.9290	60	77.5740	1,000	1,292.90	6,000	7,757.40
11	14.2219	61	78.8669	1,100	1,422.19	6,100	7,886.69
12	15.5148	62	80.1598	1,200	1,551.48	6,200	8,015.98
13	16.8077	63	81.4527	1,300	1,680.77	6,300	8,145.27
14	18.1006	64	82.7456	1,400	1,810.06	6,400	8,274.56
15	19.3935	65	84.0385	1,500	1,939.35	6,500	8,403.85
16	20.6864	66	85.3314	1,600	2,068.64	6,600	8,533.14
17	21.9793	67	86.6243	1,700	2,197.93	6,700	8,662.43
18	23.2722	68	87.9172	1,800	2,327.22	6,800	8,791,72
19	24.5651	69	89.2101	1,900	2,456.51	6,900	8,921.01
20	25.8580	70	90.5030	2,000	2,585.80	7,000	9,050.30
21	27.1509	71	91.7959	2,100	2,715.09	7,100	9,179.59
22	28.4438	72	93.0888	2,200	2,844.38	7,200	9,308.88
23	29.7367	73	94.3817	2,300	2,973.67	7,300	9,438.17
24	31.0296	74	95.6746	2,400	3,102.96	7,400	9,567.46
25	32.3225	75	96.9675	2,500	3,232.25	7,500	9,696.75
26	33.6154	76	98.2604	2,600	3,361.54	7,600	9,826.04
27	34.9083	77	99.5533	2,700	3,490.83	7,700	9,955.33
28	36.2012	78	100.8462	2,800	3,620.12	7,800	10,084.62
29	37.4941	79	102.1391	2,900	3,749.41	7,900	10,213.91
30	38.7870	80	103.4320	3,000	3,878.70	8,000	10,343.20
31	40.0799	81	104.7249	3,100	4,007.99	8,100	10,472.49
32	41.3728	82	106.0178	3,200	4,137.28	8,200	10,601.78
33	42.6657	83	107.3107	3,300	4,266.57	8,300	10,731.07
34	43.9586	84	108.6036	3,400	4,395.86	8,400	10,860.36
35	45.2515	85	109.8965	3,500	4,525.15	8,500	10,989.65
36	46.5444	86	111.1894	3,600	4,654.44	8,600	11,118.94
37	47.8373	87	112.4823	3,700	4,783.73	8,700	11,248.23
38	49.1302	88	113.7752	3,800	4,913.02	8,800	11,377.52
39	50.4231	89	115.0681	3,900	5,042.31	8,900	11,506.81
40	51.7160	90	116.3610	4,000	5,171.60	9,000	11,636.10
41	53.0089	91	117.6539	4,100	5,300.89	9,100	11,765.39
42	54.3018	92	118.9468	4,200	5,430.18	9,200	11,894.68
43	55.5947	93	120.2397	4,300	5,559.47	9,300	12,023.97
44	56.8876	94	121.5326	4,400	5,688.76	9,400	12,153.26
45	58.1805	95	122.8255	4,500	5,818.05	9,500	12,282.55
46	59.4734	96	124.1184	4,600	5,947.34	9,600	12,411.84
47	60.7663	97	125.4113	4,700	6,076.63	9,700	12,541.13
48	62.0592	98	126.7042	4,800	6,205.92	9,800	12,670.42
49	63.3521	99	127.9971	4,900	6,335.21	9,900	12,799.71
50	64.6450	100	129.2900	5,000	6,464.50	10,000	12,929.00

GOLD.

DOLLARS TO OUNCES.

[1 dollar = 0.048374957925 ounce Troy.]

Dollars.	Ounces.	Dollars.	Ounces.	Dollars.	Ounces.	Dollars.	Ounces.
1	0. 048375	51	2. 467123	100	4. 837496	5, 100	246. 712285
2	0. 096750	52	2. 515498	200	9. 674992	5, 200	251. 549781
3	0. 145125	53	2. 563873	300	14. 512487	5, 300	256. 387277
4	0. 193500	54	2. 612248	400	19. 349983	5, 400	261. 224773
5	0. 241875	55	2. 660623	500	24. 187479	5, 500	266. 062269
6	0. 290250	56	2. 708998	600	29. 024975	5, 600	270. 899764
7	0. 338625	57	2. 757373	700	33. 862471	5, 700	275. 737260
8	0. 387000	58	2. 805748	800	38. 699966	5, 800	280. 574756
9	0. 435375	59	2. 854123	900	43. 537462	5, 900	285. 412252
10	0. 483750	60	2. 902497	1, 000	48. 374958	6, 000	290. 249748
11	0. 532125	61	2. 950872	1, 100	53. 212454	6, 100	295. 087243
12	0. 580499	62	2. 999247	1, 200	58. 049950	6, 200	299. 924739
13	0. 628874	63	3. 047622	1, 300	62. 887445	6, 300	304. 762235
14	0. 677249	64	3. 095997	1, 400	67. 724941	6, 400	309. 599731
15	0. 725624	65	3. 144372	1, 500	72. 562437	6, 500	314. 437227
16	0. 773999	66	3. 192747	1, 600	77. 399933	6, 600	319. 274722
17	0. 822374	67	3. 241122	1, 700	82. 237428	6, 700	324. 112218
18	0. 870749	68	3. 289497	1, 800	87. 074924	6, 800	328. 949714
19	0. 919124	69	3. 337872	1, 900	91. 912420	6, 900	333. 787210
20	0. 967499	70	3. 386247	2, 000	96. 749916	7, 000	338. 624705
21	1. 015874	71	3. 434622	2, 100	101. 587412	7, 100	343. 462201
22	1. 064249	72	3. 482997	2, 200	106. 424907	7, 200	348. 299697
23	1. 112624	73	3. 531372	2, 300	111. 262403	7, 300	353. 137193
24	1. 160999	74	3. 579747	2, 400	116. 099899	7, 400	357. 974689
25	1. 209374	75	3. 628122	2, 500	120. 937395	7, 500	362. 812184
26	1. 257749	76	3. 676497	2, 600	125. 774891	7, 600	367. 649680
27	1. 306124	77	3. 724872	2, 700	130. 612386	7, 700	372. 487176
28	1. 354499	78	3. 773247	2, 800	135. 449882	7, 800	377. 324672
29	1. 402874	79	3. 821622	2. 900	140. 287378	7, 900	382. 162168
30	1. 451249	80	3. 869997	3, 000	145. 124874	8, 000	387. 999663
31	1. 499624	81	3. 918372	3, 100	149. 962370	8, 100	391. 837159
32	1. 547999	82	3. 966747	3, 200	154. 799865	8, 200	396. 674655
33	1. 596374	83	4. 015122	3, 300	159. 637361	8, 300	401. 512151
34	1. 644749	84	4. 063496	3, 400	164. 474857	8, 400	406. 349647
35	1. 693124	85	4. 111871	3, 500	169. 312353	8, 500	411. 187142
36	1. 741498	86	4. 160246	3, 600	174. 149849	8, 600	416. 024638
37	1. 789873	87	4. 208621	3, 700	178. 987344	8, 700	420. 862134
38	1. 838248	88	4. 256996	3, 800	183. 824840	8, 800	425. 699630
39	1. 886623	89	4. 305371	3, 900	188. 662336	8. 900	430. 537126
40	1. 934998	90	4. 353746	4, 000	193. 499832	9, 000	435. 374621
41	1. 983373	91	4. 402121	4, 100	198. 337327	9, 100	440. 212117
42	2. 031748	92	4. 450496	4, 200	203. 174823	9, 200	445. 049613
43	2. 080123	93	4. 498871	4, 300	208. 012319	9, 300	449. 887109
44	2. 128498	94	4. 547246	4, 400	212. 849815	9, 400	454. 724604
45	2. 176873	95	4. 595621	4, 500	217. 687311	9, 500	459. 562100
46	2. 225248	96	4. 643996	4, 600	222. 524806	9, 600	464. 399596
47	2. 273623	97	4. 692371	4, 700	227. 362302	9, 700	469. 237092
48	2. 321998	98	4. 740746	4, 800	232. 199798	9, 800	474. 074588
49	2. 370373	99	4. 789121	4, 900	237. 037294	9, 900	478. 912083
50	2. 418748	100	4. 837496	5, 000	241. 874790	10, 000	483. 749579

SILVER.

DOLLARS TO OUNCES.

[1 dollar = 0.773455023513 ounce Troy.]

Dollars.	Ounces.	Dollars.	Ounces.	Dollars.	Ounces.	Dollars.	Ounces.
1	0. 77346	51	39. 44621	100	77. 34550	5, 100	3, 944. 62062
2	1. 54691	52	40. 21966	200	154. 69100	5, 200	4, 021. 96612
3	2. 32037	53	40. 99312	300	232. 03651	5, 300	4, 099. 31162
4	3. 09382	54	41. 76657	400	309. 38201	5, 400	4, 176. 65713
5	3. 86728	55	42. 54003	500	386. 72751	5, 500	4, 254. 00263
6	4. 64073	56	43. 31348	600	464. 07301	5, 600	4, 331. 34813
7	5. 41419	57	44. 08694	700	541. 41852	5, 700	4, 408. 69363
8	6. 18764	58	44. 86039	800	618. 76402	5, 800	4, 486. 03914
9	6. 96110	59	45. 63385	900	696. 10952	5, 900	4, 563. 38464
10	7. 73455	60	46. 40730	1, 000	773. 45502	6, 000	4, 640. 73014
11	8. 50801	61	47. 18076	1, 100	850. 80053	6, 100	4, 718. 07564
12	9. 28146	62	47. 95421	1, 200	928. 14603	6, 200	4, 795. 42115
13	10. 05492	63	48. 72767	1, 300	1, 005. 49153	6, 300	4, 872. 76665
14	10. 82837	64	49. 50112	1, 400	1, 082. 83703	6, 400	4, 950. 11215
15	11. 60183	65	50. 27458	1, 500	1, 160. 18254	6, 500	5, 027. 45765
16	12. 37528	66	51. 04803	1, 600	1, 237. 52804	6, 600	5, 104. 80316
17	13. 14874	67	51. 82149	1, 700	1, 314. 87354	6, 700	5, 182. 14866
18	13. 92219	68	52. 59494	1, 800	1, 392. 21904	6, 800	5, 259. 49416
19	14. 69565	69	53. 36840	1, 900	1, 469. 56454	6, 900	5, 336. 83966
20	15. 46910	70	54. 14185	2, 000	1, 546. 91005	7, 000	5, 414. 18516
21	16. 24256	71	54. 91531	2, 100	1, 624. 25555	7, 100	5, 491. 53067
22	17. 01601	72	55. 68876	2, 200	1, 701. 60105	7, 200	5, 568. 87617
23	17. 78947	73	56. 46222	2, 300	1, 778. 94655	7, 300	5, 646. 22167
24	18. 56292	74	57. 23567	2, 400	1, 856. 29206	7, 400	5, 723. 56717
25	19. 33638	75	58. 00913	2, 500	1, 933. 63756	7, 500	5, 800. 91268
26	20. 10983	76	58. 78258	2, 600	2, 010. 98306	7, 600	5, 878. 25818
27	20. 88329	77	59. 55604	2, 700	2, 088. 32856	7, 700	5, 955. 60368
28	21. 65674	78	60. 32949	2, 800	2, 165. 67407	7, 800	6, 032. 94918
29	22. 43020	79	61. 10295	2, 900	2, 243. 01957	7, 900	6, 110. 29469
30	23. 20365	80	61. 87640	3, 000	2, 320. 36507	8, 000	6, 187. 64019
31	23. 97711	81	62. 64986	3, 100	2, 397. 71057	8, 100	6, 264. 98569
32	24. 75056	82	63. 42331	3, 200	2, 475. 05608	8, 200	6, 342. 33119
33	25. 52402	83	64. 19677	3, 300	2, 552. 40158	8, 300	6, 419. 67670
34	26. 29747	84	64. 97022	3, 400	2, 629. 74708	8, 400	6, 497. 02220
35	27. 07093	85	65. 74368	3, 500	2, 707. 09258	8, 500	6, 574. 36770
36	27. 84438	86	66. 51713	3, 600	2, 784. 43808	8, 600	6, 651. 71320
37	28. 61784	87	67. 29059	3, 700	2, 861. 78359	8, 700	6, 729. 05870
38	29. 39129	88	68. 06404	3, 800	2, 939. 12909	8, 800	6, 806. 40421
39	30. 16475	89	68. 83750	3, 900	3, 016. 47459	8, 900	6, 883. 74971
40	30. 93820	90	69. 61095	4, 000	3, 093. 82009	9, 000	6, 961. 09521
41	31. 71166	91	70. 38441	4, 100	3, 171. 16560	9, 100	7, 038. 44071
42	32. 48511	92	71. 15786	4, 200	3, 248. 51110	9, 200	7, 115. 78622
43	33. 25857	93	71. 93132	4, 300	3, 325. 85660	9, 300	7, 193. 13172
44	34. 03202	94	72. 70477	4, 400	3, 403. 20210	9, 400	7, 270. 47722
45	34. 80548	95	73. 47823	4, 500	3, 480. 54761	9, 500	7, 347. 82272
46	35. 57893	96	74. 25168	4, 600	3, 557. 89311	9, 600	7, 425. 16823
47	36. 35239	97	75. 02514	4, 700	3, 635. 23861	9, 700	7, 502. 51373
48	37. 12584	98	75. 79859	4, 800	3, 712. 58411	9, 800	7, 579. 85923
49	37. 89930	99	76. 57205	4, 900	3, 789. 92962	9, 900	7, 657. 20473
50	38. 67275	100	77. 34550	5, 000	3, 867. 27512	10, 000	7, 734. 55024

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ANNUAL REPORTS.

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II. Report of the Director of the United States Geological Survey for 1880–'81, by J. W. Powell. Washington, 1882. 8°. lv, 588 pp. 61 pl. 1 map.

III. Third Annual Report of the United States Geological Survey, 1881–'82, by J. W. Powell. Washington, 1883. 8°. xviii, 564 pp.. 67 pl. and maps.

IV. Fourth Annual Report of the United States Geological Survey, 1882–'83, by J. W. Powell. Washington, 1884. 8°. xii, 473 pp. 85 pl. and maps.

MONOGRAPHS.

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V. Copper-bearing Rocks of Lake Superior, by Prof. R. D. Irving. In press.

VI. Older Mesozoic Flora of Virginia, by Prof. William M. Fontaine. In press.

VII. Silver-lead Deposits of Eureka, Nevada, by Joseph Story Curtis. In press.

VIII. Paleontology of Eureka District, Nevada, by Charles Doolittle Walcott. In press.

Geology and Mining Industry of Leadville, with atlas, by S. F. Emmons. In preparation.

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Sauropoda, by Prof. O. C. Marsh. In preparation.

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ADVERTISEMENT.

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III. Geology of the Comstock Lode and Washoe District, with atlas, by George F. Becker. 1882. 4°. 422 pp. 7 pl. and atlas of 21 sheets folio. Price $11.

Nos. IV, V, VI, VII, and VIII are in press and will appear in quick succession. The others, to which numbers are not assigned, are in preparation.

BULLETINS.

The Bulletins of the Survey will contain such papers relating to the general purpose of its work as do not come properly under the heads of ANNUAL REPORTS or MONOGRAPHS.

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Of this series of Bulletins, Nos. 1, 2, and 3 are already published, viz:

1. On Hypersthene-Andesite and on Triclinic Pyroxene in Augitic Rocks, by Whitman Cross, with a Geological Sketch of Buffalo Peaks, Colorado, by S. F. Emmons. 1883. 8°. 40 pp. 2 pl. Price 10 cents.

2. Gold and Silver Conversion Tables, giving the coining value of Troy ounces of fine metal, &c., by Albert Williams, jr. 1883. 8°. ii, 8 pp. Price 5 cents.

3. On the Fossil Faunas of the Upper Devonian along the meridian of 76° 30′, from Tompkins Co., N. Y., to Bradford Co., Pa., by Henry S. Williams. 1884. 8°. 36 pp. Price 5 cents.

STATISTICAL PAPERS.

A fourth series of publications having special reference to the mineral resources of the United States is contemplated; of that series the first has been published, viz: Mineral Resources of the United States, by Albert Williams, jr. 1883. 8°. xvii, 813 pp. Price 50 cents.

Correspondence relating to the publications of the Survey, and all remittances, which must be by postal note or money order, should be addressed to the

DIRECTOR OF THE UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C.

WASHINGTON, D. C., *May* 1, 1884.

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CONTENTS.

Report of the Director, pp. i–lv, plates 1–7.

Administrative Reports by Heads of Divisions, pp. 1–46, plates 8 and 9.

The Physical Geology of the Grand Cañon District, by Capt. C. E. Dutton, pp. 47–166, plates 10–36.

Contributions to the History of Lake Bonneville, by G. K. Gilbert, pp. 167–200, plates 37–43.

Abstract of Report on the Geology and Mining Industry of Leadville, Colorado, by S. F. Emmons, pp. 201–290, plates 44 and 45.

A Summary of the Geology of the Comstock Lode and the Washoe District, by George F. Becker, pp. 291–330, plates 46 and 47.

Production of Precious Metals in the United States, by Clarence King, pp. 331–401, plates 48–53.

A New Method of Measuring Heights by means of the Barometer, by G. K. Gilbert, pp. 403–565, plates 54–61.

Index, pp. 567–588.

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The following paper forms No. 2. Its price is five cents.

Correspondence relating to the publications of the Survey, and all remittances, should be addressed to the

DIRECTOR OF THE UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C.

WASHINGTON, D. C., *August* 24, 1883.

DEPARTMENT OF THE INTERIOR

BULLETIN

OF THE

UNITED STATES

GEOLOGICAL SURVEY

No. 3

WASHINGTON
GOVERNMENT PRINTING OFFICE
1884

UNITED STATES GEOLOGICAL SURVEY
J. W. POWELL DIRECTOR

ON THE FOSSIL FAUNAS OF THE UPPER DEVONIAN

ALONG THE MERIDIAN OF 76° 30′ FROM TOMPKINS COUNTY, N. Y., TO BRADFORD COUNTY, PA.

BY

HENRY S. WILLIAMS

WASHINGTON
GOVERNMENT PRINTING OFFICE
1884

ON THE FOSSIL FAUNAS OF THE UPPER DEVONIAN.

By HENRY S. WILLIAMS.

The precise order with which geological faunas have made their appearance and succeeded one another is little enough understood for any long period of time, but for no period of geological history is there greater perplexity in regard to this order, in proportion to the knowledge we have of the species themselves, than for that filling the interval between the Upper Silurian and the Coal Measures of the Carboniferous.

This perplexity exists, not only for the American series, but in Great Britain—in Europe—wherever large areas have been geologically surveyed there are problems in regard to the relations of these faunas still unsolved.

In America the sections of the Devonian and the Sub-Carboniferous deposits are alike in no two States. In one section the changes in stratigraphical conditions are accompanied by well-marked faunas; in another, the species making up the faunas appear under different combinations, and species characteristic of distinct zones in one series will be found mingled in a common fauna of another.

That there is some explanation of these differences, some clew to this apparent confusion, is certainly to be presumed.

As the questions involved concern the laws of range and distribution of organisms, and thus are based upon the effects of changed or changing conditions of environment upon the organisms, we naturally look to the zoology of living forms for suggestions.

We find that in the present ocean the depth of water, the temperature, and the degree of saltness and the freedom from suspended impurities have all a marked influence upon the normal fauna of every part of the ocean.

Further, we find that on the two sides of the ocean—on opposite coasts of a continent—and even along a continuous coast-line, in two regions separated by a few degrees latitude, the faunas are characteristically different, and when these geographical areas are far separated, although under similar conditions otherwise, the faunas may contain scarcely a single species in common.

The revelations made by deep-sea dredging are also very suggestive. They have shown us that with all these differences in upper faunas, in the depths of the ocean species may range from one quarter of the

globe to the opposite quarter with scarcely a varietal modification, and when the physical conditions have been continuous, geological ages are not too long for the perpetuation of species without important modification.

Again, the wonderful effects upon the distribution of faunas produced by ocean currents is brought forcibly to our attention by the reports of our Fish Commission. Their investigations reveal the existence of an abundant fauna within a hundred miles of the New England coast, entirely distinct from the fauna prevailing all along that part of the coast out to deep water; and further, as Professor Verrill informs me, this unique fauna, which, at the time of its first discovery was composed of a large number of species and a great abundance of individuals, has now apparently left the region altogether.

From this we learn that in a very small geographical area we might find the remains of two entirely distinct faunas, preserved in two strata of a continuous formation, lying the one immediately upon the other, conformably, yet geologically entirely contemporaneous.

In the light of such facts the study of fossil faunas becomes an extremely complex problem.

The aggregation of species into faunas, the blending of one fauna with another, the rarity or abundance of particular species, variation in form or size or modification of specific characters, the extinction of old and the initiation of new forms—all these become the most delicate tests of change in the physical conditions, the record of which constitute the geological history of the earth.

For the correct solution of this problem the laws of geographical distribution form as important an element as geological sequence. The attempt to apply such principles to the study of the Devonian and Sub-Carboniferous deposits is no simple task, but the very fact that their faunas offer so great variation and difference in their combinations makes this series particularly attractive for the purpose.

In the eastern half of America are a dozen or so States in which more or less complete sections of the deposits, from the Niagara group to the Coal Measures, may be studied.

While our State surveys have been accurate and thorough for economical purposes, those engaged in the work have generally been satisfied with noting and describing the fossil species found in each geological formation, rarely are the complete faunas of any locality or stratum given in detail.

From our present literature it is difficult to ascertain anything beyond the general facts of the geographical distribution of fossil species; and the study of geological range is complicated by the uncertainties as to the precise equivalency of the deposits containing the fossils.

This study involves, therefore, not only an arduous review of the geological surveys of the several regions of the country, but requires

also a special preparation of long sections covering the whole series of deposits under consideration, and at such geographical intervals as will allow of the certain determination of stratigraphical equivalency between them.

In making such sections, it is important to note the exact order of the faunas and the abundance, rarity, difference in relative size, and any modification of form of the species contained in the fauna, together with the particular lithological character of the rock.

It was with such ideas in mind that I examined in the summer of 1882 a meridional section extending from Cayuga Lake southward to the first appearance of coal at the Barclay mine, in Southern Bradford County, Pennsylvania. This section, added to the well-known section exposed along the shores of Cayuga Lake, gives us a continuous series from the base of the Devonian to the coal lying above the first conglomerate of this meridian. I gave particular attention to the faunas marking the passage from the second Devonian Black Shale (the Genesee shale) through the "Portage," "Ithaca," and Chemung groups.

The precise thickness of the whole series must remain a matter of calculation. The numerous local sections were measured and may be put together, but the element of dip is not uniform, and can be reached only approximately.

The details of the stratigraphical characters constantly change, so that the sections of two ravines, within a few miles of each other, are quite different. Still, the general character of the rock masses and the prominent composition of the faunas are easily followed from one exposure to the next throughout the whole area examined.

The sequence of the faunas, which was particularly sought, was satisfactorily determined. I do not believe that the complete fauna of any particular zone has been given; but in the lists which follow all the characteristic species are undoubtedly included, and all the species thus far discovered in condition admitting of identification are also recorded.

It must be remembered that a great majority of the fossils of these Upper Devonian shales are in the condition of impressions, often very perfect, but many of them fragmentary. The section here examined lies between the third and fourth districts of the original State survey (see Vanuxem's Geol. of N. Y., 3d Dist., 1842, p. 170), and both Professor Hall, who reported on the fourth district, and Mr. Vanuxem, who reported on the third, regarded it as a typical section, though in no report are we able to find a satisfactory description of it.

The present condition of the rocks presents a series of gentle undulations, with a general slight dip to the south (see Proc. Am. Ass. Adv. Sc., Vol. XXXI., Pt. 2, p. 412); a continuation northward of the condition of things described in Report G, Second Geol. Surv. of Penn., p. 9, &c.

The average dip as estimated for this section is something over 25 feet per mile.

North of Ithaca, at Burdick's Glen, 4 miles from the southeast corner of Cayuga Lake, the Genesee shale appears capped by the sandstones and shales of the Portage group. At that point the top of the Genesee shale is about 60 feet above the lake level, or (376+60) approximately 440 feet above the sea level.

The fauna of this Black Shale contains, as was suggested by Professor Hall in his early study of these formations, several species of the fauna appearing in the Marcellus Black Shales which overlie the Corniferous limestone.

A comparative study of these and other faunas led me to infer that the Genesee fauna was merely a recurrence of the Marcellus fauna, a few species dropping out and a few being added, and that the same fauna did not become extinct with the incursion of sands and shales of the Portage group, but with some modifications continued to appear under favorable conditions after the Portage faunas were initiated. (See Recurrence of Faunas, Proc. Am. Ass. Adv. Sc., Vol. XXX, p. 186.) Evidence is also found of the recurrence of a partial Hamilton fauna just before the incursion of the fauna of the "Ithaca group" of Vanuxem.

These facts made it plain that over any particular area the faunas shifted back and forth with the advance of geological time. Hence I was led to the simple conception of a fauna as continuing on intact so long as the favorable conditions for its life continued, as shifting its habitat with the elevation or depression of the land with the advance or retrocession of the coast line. In such shifting and change of condition, one species after another may drop out and become extinct; others may suffer varietal modification, and, what is still more important, the sudden appearance of new forms may take place in the midst of the normal fauna—forms new to the locality only, or entirely new, so far as our knowledge of the fossils can tell us. Merely from the initiation of the new forms in the fauna we can gain no clew of its origin, but the study of its relations to allied forms of other faunas may enable us to decide whether it is a modification of some older form, or the forerunner of a new type, marking a later geological stage.

Thus our attention is called to the study of the typical forms of organisms with their variations—to associate their variable elements with locality or geological horizon, and thus to accumulate the elements for an historical account of organisms.

As we enter this field of investigation we soon find that specific names in palæontology have often been given under the influence of the belief in the old canon that each geological formation had its distinct set of organisms. Hence, when the boundary between two such divisions of the rocks is once established, the tendency has been strong to give separate specific names to representatives of the two formations,

and to define as specific the differences, which often prove to be little more than individual variations. It is therefore necessary to guard against deception caused by specific names.

In tracing the species of a single section backwards or forwards, we find at each stage a particular facies to the fauna, which suggests its nearest relation, and for this purpose varietal characters are especially valuable. For instance, in the Ithaca group the *Spirifera mesocostalis*, of the type "*prolata*" of Vanuxem or *D. acuminata* of Hall, is characteristic of the lower stage, while the higher, and particularly the Western New York variety, is Hall's typical *Sp. mesocostalis*. In the higher beds the two occur together, but the latter prevail; in the lower beds we never see the later variety. The varietal modification of the species then becomes a mark of the horizon. Many such cases might be mentioned, and the mere record of the species is not sufficient—the specimens should be examined in every case.

We have in the present section several clearly defined faunas of which I propose to give some account in this paper.

At the base of the Upper Devonian is the second appearance of the Devonian Black Shale. The limestone which underlies it is the Tully limestone. West of the Cincinnati axis there appears to be only a single mass of this Black Shale, and even in Ohio the separation of the Black Shales is not entire except in the eastern part, and there no limestone bed intervenes.

That these Black Shales were in some way associated with an elevation of the sea-bottom seems conclusive, from the relation they bear to limestone deposits below, and from the nature of the fauna and flora contained. Thus the Utica slates follow the Trenton limestone, the Marcellus the Corniferous limestone, the Genesee the Tully limestone, or where the Tully was wanting, the Hamilton itself is more or less calcareous.

The shales are mostly barren of marine fossils, and only rarely are distinct pieces of plant stems seen.

Lepidodendra and *Rhodea* are occasionally found.

The fauna is usually found near the top, and all the species are delicate and mostly minute or small.

The species detected in this locality are as follows:

FAUNA OF No. 34 D., GENESEE SHALE.

Discina lodensis.
truncata.
Lingula spatulata.
concentrica.
Styliola fissurella.
Tentaculites gracilistriatus.
Orthoceras subulatum.
Leiorhynchus quadricostatus.

Lunulacardium fragile.
Cardiola speciosa.
Ambocœlia umbonata.
Chonetes lepida.
Goniatites (a fragment).
Rhodea pinnata (stems).
Phthonia lirata.

The more abundant species are:

Discina lodensis.
Styliola fissurella.
Chonetes lepida.

The variety of *D. lodensis*, called by Hall *D. truncata*, is quite common. Comparison of numerous specimens leads me to believe that this is but a varietal modification of *D. lodensis*.

The rest of the species are rare.

Immediately above the Genesee shale are two thick sandstone layers separated by a few inches of shale, the whole about 4 feet thick.

In these sands and shales there are great numbers of pyrite nodules from the size of a pea, or smaller, to an inch and over in length. No fossils were observed in these first beds.

Following the sandstone are the sandy shales, characteristic of the Portage group.

Above the sandstone there occur some masses of black fissile shale resembling the Genesee shale, but neither so dark nor so soft. The silica predominates and the fauna is sparse, and, so far as observed, never bears the *Discina* or *Lingula* of the beds below.

Some lighter-colored, greenish, soft shales appear above, and in them occurs the first distinct Portage fauna.

The first species seen are Cardiidæ—the large forms, originally described as *Pinnopsis ornatum* and *P. acutirostra*—and on passing upward we soon meet *Cardiola speciosa*, *Goniatites*, *Hyolithes*, and *Coleolus*, and after passing fifty or a hundred feet of blue-gray, sandy shales, with some light olive argillaceous shale, and an occasional dark streak, the *Nuculas* and *Lunulacardium fragile* appear.

The passage is gradual from the lower to the upper of these subfaunas, and there is no distinct stratigraphical division of the series until we pass the brachiopod fauna, which is unique in holding *Spirifera lævis* in abundance. This fauna occurs about 200 feet above the base of the Portage formation in this meridian. About 50 feet below it, or say 150 feet above the Genesee shale, is a sparse but very interesting fauna, characterized by the abundance of a large *Cladochonus* (McCoy), a genus closely allied to *Aulopora*, of an undescribed species, which I have figured and described in MSS.

This is the first fauna which is distinct from the general Portage fauna with which it is interstratified. The fauna is that of Station No. 48 of my

records, and occurs in a dark, blue-gray shale, weathering brown, less arenaceous than the ordinary Portage shales, and outcropping along the side of Cayuga Lake Railroad, a little north of McKinney's Station.

FAUNA OF No. 48.

Cladochonus (McCoy), sp.
Spirifera subumbona, Hall.
Chonetes lepida.
Leiorhynchus mesocostalis.
Grammysia subarcuata.
Cardiola speciosa.
Goniatites complanatus ?
?*Leda curta.*
Palæoneilo filosa ?
Nucula Randalli (or ? new).
Nuculites oblongatus.
Strophodonta mucronata.
Coleolus aciculum.
Orthoceras = a small form (= ? *O. bebryx*).
Arm of a small crinoid.
Stem of *Rhodea.*
A small Lamellibranch (= ? *Macrodon*).

This fauna (of Station No. 48), coming as it does entirely below the *Spirifera lævis* fauna, is remarkable as holding several species which are generally regarded as characteristic Chemung species.

The *Strophodonta mucronata* is particularly to be noted, but the entire facies of the fauna reminds us of the Ithaca group rather than anything below. The *Spirifera subumbona*, Hall, is well preserved, and exhibits the convex dorsal valve and the surface-markings of that species. That this is identical with the forms occurring in the higher Chemung faunas and called *Ambocœlia umbonata* var. *gregaria* of Hall, I have no doubt. It is also possible that the British and European *Spirifera urii*, Fleming, is specifically identical. This form is a characteristic of the Upper Devonian faunas, where it is generally associated with our representatives of "*Spirifera disjuncta* and *Orthis interlineata*," the species mentioned by Murchison as its common associates in the Barnstaple, Marwood, and Pilton series of North Devon. Its surface-markings, which are quite like those of *Spirifera lævis* (occurring just above it and but once elsewhere in the series for this meridian) lead us to associate it with the early representatives of the Carboniferous faunas.

Cladochonus is also, so far as recorded, a Carboniferous form. (See Murchison's Siluria, 2d ed., p. 299; Davidson's Brachiopoda, Pt. VI, p. 41; Hall, Geol. N. Y., 4th Dist., pp. 234, 261.)

The species collected from station 48, are all small and delicate, and some of them are mere fragments.

The *Cladochonus* and the *Spirifers* are the most abundant, and show the result of favorable conditions for growth.

The species, both below and above this stratum, are rare and generally fragile, and consist of pelagic forms, such as *Pteropods* and *Cephalopods* with a characteristic fauna of *Lamellibranchiates*, but scarcely a trace of *Brachiopods*.

The next distinct fauna we recognize is that of Stations No. 1 and No. 4, two points on opposite sides of the valley in which Ithaca is situated.

Station No. 1 is at the foot of Fall Creek on the east side, and No. 4 is at the southwest corner of Cayuga Lake. A few other exposures of the same horizon have been examined, but these two are characteristic.

The prominent species of this fauna are—

Spirifera lævis, Hall, and *Palæoneilo filosa*, Con.

Lunulacardium fragile is generally present but not abundant, and *Taxocrinus Ithacensis* is represented quite abundantly by fragments of the stem and by an occasional perfect head.

The other species named are representative of the fauna but are less frequently obtained.

In this list, as in others which follow, some species are recorded from fragmentary specimens from which only the generic characters can be determined with satisfaction.

FAUNA OF STATION No. I, B AND D.*

Spirifera lævis.
Palæoneilo filosa.
Lunulacardium fragile.
Chonetes lepida.
Taxocrinus Ithacensis.
Goniatites complanatus var. *perlatus.*
sinuosus.
discoideus.
Porcellia Nais.
Orthoceras pecator.
anguis.
Coleoprion sp.
Cardiola speciosa.
Styliola fissurella.
Hyolithes aclis.
Aviculopecten sp.
Cyrtina Hamiltonensis.
Grammysia subarcuata.
Modiomorpha subalata.
? *Aulopora* or *Cladochonus*, fragments.
Palæoneilo constricta.

* The species recorded in these lists are arranged in the order of their relative abundance at each station, the more common being placed first.

Cardiola transversa?
Leda perstriata.
Pleurotomaria sp.
Discina sp.
Leiorhynchus mesocostalis.
Crania sp.
"*Lycopodites*" *Vanuxemi.*
Leperditia.
Rhodea stems.
Fish bones, fragments.
Stictopora Meeki.

Some other species are recorded from the "Portage" at Ithaca, and may belong to this fauna, but the list here given includes only species known to belong to this particular horizon.

As far as known this fauna does not occur west of Seneca Lake, and, taken as a whole, it is characteristic of the eastern extension of the Portage group. I would call particular attention to the absence of *Præcardium* (*Cardium?*) *vetusta* and *Cardiomorpha* ("*Ungulina*") *suborbicularis.* I have not observed either of these species in any part of the present meridional section, although they are frequently met with in the Portage formation a little farther west.

Three of the species will be remembered as common in the higher Chemung faunas (*Cyrtina Hamiltonensis*, *Grammysia subarcuata*, and *Modiomorpha subalata*), but they occur also below in the Hamilton group, or are represented by a closely allied form, as *Grammysia arcuata.*

Spirifera lævis is a specially interesting form. It appears to be quite limited both in range and distribution. A closely allied form, *Sp. maia*, occurs in the lower Devonian of Ohio and Ontario, and a similar form appears in the Devonian of the far West. It is closely allied, if not identical, with *Spirifera glabra* of the British Carboniferous, and appears to link that species with the Devonian *Sp. curvata.* (See Davidson, Supl. Brit. Dev. Brachiopoda, p. 32.)

Tracing the faunas upward, after passing the *Spirifera lævis* stage, the shales gradually loose their coarse bedded character, the laminæ become finer and more fissile, and about 30 feet higher up the rocks assume a decided fissile character—are composed of a dark, nearly black, shale, weathering reddish-brown from iron stain, and occasionally carry lenticular beds of very tough, siliceous sandstone. These sandstone masses I have described elsewhere as channel-fillings. (See Am. Jour. Sc., Vol. XXI, p. 318.)

The dark, fissile, argillaceous shales are generally about 20 feet thick; no fossils appear at their base, but toward the top are often found great numbers of *Lingulas* and a few other delicate species.

The famous Lycopodites beds of Professor Hall lie in these shales, where great numbers of *L. Vanuxemi* in very perfect condition occur, with stems of *Rhodea* and other plants, and large fish-bones.

Numerous exposures of this stage are seen in the ravines about Ithaca. My Station No. 6 gives a good exhibition of the fauna. In the following list the species named are from Station No. 6 and equivalent strata within a radius of a mile or so about it:

FAUNA OF STATION No. 6.

Lingula complanata.
Ptilophyton (*Lycopodites*) *Vanuxemi.*
Leiorhynchus mesocostalis and vars.
Lunulacardium fragile.
Cardiola speciosa (rare).
Lingula punctata.
spatulata var.
ligea.
Poteriocrinus, stems.
Productella, a minute species.
Styliola fissurella.
Rhodea stems.
? *Spirorbis.*
Rhachiopteris punctata.
? *Psilophyton.*
Productella truncata.
Palæoneilo filosa.
brevis.
Leptodesma sp.
Goniatites complanatus.
Microdon gregaria.
Orthoceras pecator.
Loxonema sp.
Rhynchonella eximia (young).
Pleurotomaria capillaria.
Phthonia lirata.

In this fauna *Lingula complanata* and *Lunulacardium fragile* are the characteristic species, and are generally abundant.

The *Ptilophyton* Dawson=*Lycopodites* is abundant in some localities, and the *Leiorhynchus* is also very abundant in some layers, but does not appear in all the exposures. The other species are rare; some of them are known only by fragments.

The *Leiorhynchus* is very variable, and is a thin, fragile shell in these shales, and often distorted.

Specimens occur which present more or less fully the distinctive characters of *L. limitaris*, of *L. quadricostata*, or of *L. mesocostalis.*

A comparative study of the specimens from various stages of the Devonian has led me to regard all the species of *Leiorhynchus*, of the New York Devonian at least, as varieties of a common form, whose plasticity has not permanently ceased at any of the horizons in which it

's. The different varieties appear to be closely related to the nature e rock containing them; but, while the majority of individuals in particular stratum are of one variety, in most every case some inuals present the characteristics of the other varieties.

ıgula complanata is of the type of the Ohio species, *L. membranacea* *L. manni;* and the Brazilian species, *L. stauntoniana*, Rathbone, is indistinguishable from some specimens of *L. complanata*, and occurs in a dark fissile shale.

is form is entirely distinct from the *L. ligea* and *L. ligea* var. of in so far as description and illustration go, but it appears to have included among the typical specimens now in the American Mu-

couple of specimens, agreeing entirely with the figures and descrip- of the *L. ligea* H, in the New York reports, have been found in these associated with the others; but the thin, almost perfectly flat char- of *L. complanata* is characteristic of it, as seen in many hundred mens. The theory that the latter is but a crushed *L. ligea* is con- cted by the observation that the flattening of an oval convex form, *L. ligea* would increase the width near the center where the shell st convex, while near the front the width would be little changed, e sides would be even more curved, instead of being nearly straight the form called *L. complanata.*

we pass above this soft shale, which is generally terminated by a 3 inch stratum of sandstone, the fauna changes.

layer of concretions, like cobble-stones, occurs a few feet above the stone; this is followed by a thin stratum of arenaceous shale, with bundance of *Lingula punctata.*

few feet higher occurs my fauna No. 14 N—a remarkable recurrent ilton fauna, traces of which have been seen in several localities.

e species identified are as follows:

FAUNA OF STATION No. 14 N.

Spirifera fimbriata.
angusta.
Pleurotomaria capillaria.
Ambocœlia umbonata.
Loxonema delphicola.
Leiorhynchus mesocostalis.
Rhynchonella contracta.
Orthoceras sp.
Avicula subdecussata.
Microdon tenuistriata?
Modiomorpha complanata.
Palæoneilo sp.
Lingula punctata.
L. sp.

The shales above Station No. 14 N become coarse and blocky, and so continue for hundreds of feet, interrupted by occasional thin beds of soft argillaceous shale and layers of hard sand.

The fauna characteristic of the "Ithaca group," of the early New York reports, begins to appear at this point, with *Leiorrhynchus* the first genus to be abundantly represented.

The form *L. mesocostalis* is more common in the soft shales, but in the more arenaceous beds the convex forms *L. globuliformis* and *L. Kelloggi* appear; but here, as in lower stages, the presence or absence of lateral plications, the number of folds on the sinus, or its prominence, and the general form of the shell are characters which vary in almost every handful of specimens, and lead us to believe that the representatives of the genus *Leiorhynchus*, found in the Devonian of New York at least, offer no better claim to specific distinction than do the various forms of *Atrypa reticularis*, although the variations of form and the relative prevalence of certain variations are valuable and, we believe, sensitive indicators of changed conditions of the environment.

There is a general rule which prevails among the forms called *Leiorhynchus*. In the early stages of the Devonian—the Marcellus shale or below—the majority of specimens are plicated over the sinus and way to the lateral margin of the shell, giving us typical *L. limitaris*, but even in the Marcellus, individuals, especially as they increase in size, drop the lateral plications. The prevailing type for the Hamilton is that called *L. multicosta*, in which the lateral plications are generally faint and fewer, while the central plications are strong and more raised than in the lower forms. In the Genesee, *L. quadricostata* is the common form, with the lateral folds nearly obliterated.

In the early Chemung, *L. mesocostalis*, *globuliformis*, and forms like *L. Kelloggi* prevail, while the small *L. sinuatus* is more common toward the top, all of them, typically, having smooth lateral slopes and a few plications along the center, forming a more or less distinct fold and sinus.

But we notice that a few specimens may be found in Chemung shales, plicated quite to the margin, as in the early type. Thus in interpreting the fauna of 14 N., the presence of the Chemung type of *Leiorhynchus*, although in the midst of a nearly pure Hamilton fauna, shows that, in time, we have passed the Hamilton stage, though Hamilton species are not yet extinct, and that we have a recurrent fauna, and not the normal Hamilton fauna. Thus the fossils independently confirm the facts which the stratigraphy testifies.

Passing this transition stage in which an occasional fossil appears—a *Palæoneilo*, a *Leiorhynchus*, or some other species of wide range—the fauna of the Ithaca group gradually makes its appearance. Between 150 and 200 feet above the *Lingula complanata* stage the Ithaca fauna appears in full force, and 50 feet higher has exhibited the full complement of its species.

The first species, which is thoroughly characteristic of the fauna, is

Spirifera mesocostalis of the eastern variety. This is the form figured in Pal. N. Y., Vol. IV, Plate 40, Figs. 1, 2, and 3. At the first appearance of this species, it is associated with *Leiorhynchus mesocostalis*, *Palæoneilo filosa*, and *Chonetes* of the *C. scitula* type, and traces of *Microdon* and of *Modiomorpha*.

This fauna may be seen at the base of the old inclined plane, my Station No. 27 A and B.

A little higher *Rhynchonella eximia* appears, then *Orthis impressa* and *Strophodonta mucronata*, and these half dozen species, earliest to appear in the region, are characteristic and among the most abundant species of the fauna of this Ithaca group, viz, *Spirifera mesocostalis* (1st var.), *Palæoneilo filosa*, *Orthis impressa*, *Strophodonta mucronata*, *Leiorhynchus mesocostalis*, and *Rhynchonella eximia*.

Leiorhynchus is peculiar in being very abundant where it appears, but when it is abundant there are generally very few other species in the same stratum.

Having passed this first stage of the introduction of the fauna, we reach a sandstone bed, calcareous in some localities, forming a firestone bed, which is a consolidated mass of broken fossils.

The characteristic species of this layer are *Spirifera mesostrialis* and *Cryptonella eudora*.

In several places about Ithaca this stratum is worked for quarry stone. The old McCormick quarry of the early reports, the present University quarry, and several others, are at this horizon.

The University quarry, Station No. 5, is characteristic.

FAUNA OF STATIONS No. 5, ETC.

Spirifera mesostrialis.
Cryptonella eudora.
Spirifera mesocostalis 1st var.
Gomphoceras tumidum.
Cyrtina Hamiltonensis.
Orthoceras bebryx var. *Cayuga.*
Poteriocrinus Cornellianus.
Pleurotomaria capillaria.
Productella speciosa.
Euomphalus Hecale?
Grammysia elliptica.
Rhynchonella eximia.
Atrypa reticularis.
Ptilophyton (*Lycopodites*) *Vanuxemi.*
Rhodea (stems).
Fragments of wood.
Stictopora Meeki.
Microdon bellistriata.
gregaria.

Platyceras carinatum.
Modiomorpha concentrica?
Bellerophon sp.
Strophodonta perplana var. *nervosa.*
Rhynchonella Stephani.
Zaphrentis simplex?
Stromatopora sp.

To this fauna probably belongs *Streptorhynchus*, a single specimen of which I have seen from "Ithaca," but do not know the precise locality.

Below this zone, perhaps 50 feet, is found in a single locality, Station No. 37, a small but very abundant fauna of *Crinoids*, *Bryozoa*, and *Rhynchonella.*

FAUNA OF STATION No. 37.

Rhynchonella eximia.
Poteriocrinus gregarius.
Stictopora Meeki.
Spirifera mesocostalis.
Cyrtina Hamiltonensis.
Productella, a small species.
Aviculopecten cancellatus.
Plates of a large *Arthroacantha.*
Two or three *Bryozoa*, undetermined.
A small *Lycopodites.*

The first three species constitute the mass of the fauna; the others are rare.

The lithological characters are interesting. In the midst of sandy shales containing the *Brachiopods* is included a stratum of but an inch or so in thickness of fine, soft, mud shale, almost black, and containing the *Crinoids* and the small *Lycopodites.*

The *Crinoids* are minute, but occur in great numbers and exhibit considerable variation. (See Proc. Acad. Nat. Sc. Phil. 1882, p. 22.)

Passing above Station No. 5 the typical Ithaca group fauna prevails for some hundred feet or more, then gradually lessens in the number of its species and individuals, and the last species to appear is the *Spirifera mesocostalis* and *Orthis impressa.*

The fauna is found in several of the ravines about Ithaca; the best exposures are in Fall Creek and the upper part of Cascadilla Creek, and along the cutting on South Hill called the "inclined plane" in the old State reports.

FAUNA OF STATIONS No. 10, 27 C, D, ETC.

The "Ithaca fauna" proper:

Spirifera mesocostalis 1st var.
Strophodonta mucronata.
perplana var. *nervosa.*
Cyrtina Hamiltonensis.

Productella speciosa.
Atrypa reticularis.
Microdon bellistriatus.
Leiorhynchus mesocostalis.
Orthis impressa.
Chonetes setigera.
Chonetes scitula.
Crania sp.
Productella speciosa, small var.
Lingula spatulata var.
Lunulacardium fragile.
Cytherodon quadrangularis.
Palæoneilo filosa.
Leda n. s.
Pterinopecten suborbicularis.
sp.
Leptodesma (several species).
Actinopteria Boydii.
Modiomorpha complanata.
Grammysia subarcuata.
Nucula sp.
Aulopora sp.
Orthoceras Bebryx.
fulgidum.
Bellerophon leda.
Pleurotomaria capillaria.
Tentaculites spiculus.
Stictopora Meeki.
Callopora, Hall, sp.
Platyceras sp.
Discina neglecta?
Goniatites uniangularis?
Orthoceras pecator.
Arthroacantha Ithacensis.
Productus dissimilis (abundant in a single locality).
Rhynchonella pugnus var. (frequent in localities).
? *Strophodonta demissa.*

This Ithaca fauna contains a few other species, but I have given the main list in approximately the order of their abundance. The species in the early part of the list are frequently seen, and some of them are abundant in localities; those recorded lower down in the list are rare, or seen, it may be, abundantly in single strata or localities. A few, not given in the list, are not certainly of this horizon, and are on this account omitted.

It will be noticed that a few of the species of the general Portage fauna are here included, as *Palæoneilo filosa*, *Lunulacardium fragile*, and

a few *Goniatites* and *Orthoceratites*, which occur here in imperfect condition, but *Cardiola speciosa*, a characteristic Portage form, has not been detected in the midst of the Ithaca fauna.

However, a little farther south, at Station No. 68, Newfield, as the Ithaca fauna ceases, the typical Portage fauna reappears.

One hundred to one hundred and fifty feet above the termination of the Ithaca fauna, in dark, fine, argillaceous shales, appear the following species:

Cardiola speciosa.
Lunulacardium fragile.
Lingula complanata.
Bellerophon mæra.
A small *Palæoneilo.*
Rhodea stems.
Strophodonta mucronata.

This is the fauna of No. 68 A and B.

This I take to be the mark of the final withdrawal of the Ithaca fauna from this geographical area, and the return of the general Portage fauna.

What is also remarkable of this fauna in this region is its withdrawal in the reverse order in which it came in.

After the Brachiopod fauna is pretty well gone, there appears a soft, almost black, argillaceous shale bearing *Discinas*, and above this, and almost alone, occurs *Spirifera lævis*, which, it will be remembered, appeared in abundance entirely below the Ithaca fauna, and was in the zone preceding that in which the *Lingula complanata* fauna occurred.

This Ithaca fauna does not appear far west of Ithaca, but a few of its species—the Cladochonus subfauna almost entire—appear 20 miles west in ravines running into Seneca Lake.

It will be noticed that *Strophodonta mucronata* also appeared in Station No. 48, the earliest forerunner of the Ithaca fauna.

The study of the order of the faunas alone in this meridian furnishes strong evidence for the opinion that what I have called the Ithaca fauna, which was characteristic of the "Ithaca group" of the early State geologists, is geographically a temporary fauna, preceded and followed by the conditions and fauna generally regarded as belonging to the Portage group. This subject will be further discussed when the sections in other parts of the State shall be brought under consideration.

In this meridian several hundred feet of deposits follow, in which almost no fossils occur. Its general character is that of coarse arenaceous shales with thin seams of sandstone, tending, in the upper part, to flaggy and uneven, wave-marked strata. Interstratified with these are thin streaks of greenish argillaceous shales, in which are seen, rarely, the species of the Portage fauna.

This condition of things prevails, at this meridional section, until

about 1,300 feet above the top of the Genesee shale, where the first of the typical Chemung faunas appear.

The first species of this fauna, that I have detected, are on the high hill south of Ithaca, in Danby (Station No. 58), about 1,500 feet above the sea, and estimated to be stratigraphically 1,300 feet or more above the Genesee shale.

A lithological difference is clearly seen in the change from dark, tough, wave-marked, arenaceous shales with interstratified greenish argillaceous shales, to soft, coarse-bedded, blocky shales, weathering brown and rapidly disintegrating into rich yellow soil. The first species met with were from Station No. 58:

Productella lachrymosa.
Ambocœlia umbonata var. *gregaria.*
Orthis impressa (second variety, wide and large).
Atrypa reticularis.
And a few other imperfect fossils.

Both east and west of this locality, in Caroline and in Newfield, are hills rising to 1,800 or 1,900 feet, and the upper part of these hills, though mainly covered by a deep coating of soil, exhibit outcrops and loose slabs and blocks, still angular (thus evidently not transported), in which the Chemung fauna appears.

Still farther south the same rocks and fauna are found, in place, at a lower level.

Numerous sections have been made along this meridian, containing the Chemung fauna. It is an abundant fauna, and it appears to have been subdivided into a few local subfaunas. Still it is difficult to speak positively here, on account of the rapid change in the detailed stratigraphical conditions. Sometimes it is difficult to trace some particular fossiliferous stratum even across a wide gorge of a few hundred feet. However, I have been able to determine the order of the subfaunas of the Chemung group as follows:

As before mentioned, traces of the fauna occur before it appears in full force, and as in the case of the Ithaca fauna, the forerunners of the Chemung fauna are characteristic species and also species of wide geological range. There are such species as *Productella lachrymosa*, *Ambocœlia umbonata* var. *gregaria*, and the wide form of *Orthis impressa*.[1]

After these species had appeared, and far above the last traces of the Ithaca fauna, a stage of fine, fissile, argillaceous shales, in some exposures nearly black in color, appeared at the base of the series of strata bearing the main Chemung fauna. This dark shale is well represented at Van Ettenville, my Station No. 62 A. It appears also at the bottom of the cliff at lower Chemung Narrows, Station No. 67 A. In the midst of the

[1] In giving the names of species in this paper I have intentionally chosen those names by which the forms are more commonly designated in collections of New York fossils; points of nomenclature and comparison of local varieties with each other, and their identification with species of wider or distant geographical areas, may appropriately be left for special consideration.

shale are generally found flattened concretions of brown hematite, often inclosing a few species which are more abundant in the beds higher up. This is, so far as I know, the lowest Devonian horizon for definite agglomerations of the hematite ore.

The shales themselves carry a Lingula fauna, very similar to that in the dark shale at the base of the Ithaca group, but mingled with other species. These latter species appear to belong normally to the fauna of the common Chemung shales with which the Lingula-bearing shales are interstratified.

The following species occur in the fauna of Station No. 62 A and B:

Lingula complanata.
punctata.
Spirifera mesocostalis (2d var.).
mesostrialis (2d var.).
Ambocœlia umbonata var. *gregaria.*
Cyrtina Hamiltonensis.
Orthis impressa (2d var.).
Atrypa reticularis.
Leptodesma sp.
Chonetes scitula.
Crinoid stems (?= *Taxocrinus*).

A variety of *Lingula spatulata* occurs in similar shales of Station No. 67.

The following species appear in a similar shale at about the same horizon, and I believe them to belong to the same subfauna:

Productella speciosa (small var.)
Rhodea stems.
Palæoneilo filosa.
Schizodus sp.
Euomphalus Hecale?

This subfauna and the containing shales gradually pass up into coarser, brown, arenaceous shales and the normal Chemung fauna.

The most northern exposure, at which the typical Chemung fauna was found in abundance, was high up in the hills in the northeastern part of Chemung County, near Park Station of the Utica, Ithaca and Elmira Railroad, between 1,400 and 1,500 feet above the sea. It is my Station No. 72, with the following fauna:

Orthis Tioga.
carinata.
Strophodonta cayuta.
Productella lachrymosa.
Spirifera disjuncta.
Atrypa reticularis, vars. *spinosa* and *hystrix.*
Spirifera mesostrialis (2d var.).
Ambocœlia umbonata var. *gregaria.*

Spirifera mesocostalis (2d var.).
Streptorhynchus Chemungensis.
Pterinea Chemungensis (Con.).

The above are the more common species at this locality, and in every locality in this region where the Chemung fauna appears in full force. With the above are associated a long list of other species, met with more rarely in any particular locality and less universally, but in several cases locally abundant.

The cliffs along the narrows, above and below Chemung village, contain the typical Chemung fauna.

I have added some species to those already quoted from this locality by the State geologists and others.

TYPICAL CHEMUNG FAUNA (STATIONS NOS. 65, 66, AND 67).

Orthis Tioga.
Streptorhynchus Chemungensis.
Aviculopecten pecteniformis Hall.
(= *Pterinea Chemungensis* (Con.)) H. S. W.
Strophodonta Cayuta.
demissa.
Productella lachrymosa var. *lima.*
costatula.
Spirifera disjuncta.
Ambocœlia umbonata var. *gregaria.*
Atrypa reticularis.
Rhynchonella contracta.
Leiorhynchus sinuatus.
mesocostalis.
Cryptonella eudora.
Pteronites spinigerus Con.
Pterinea protexta Con.
Avicula multilineata Con.
Cypricardites (*Goniophora*) *Chemungensis.*
Schizodus (*Nuculites*) *Chemungensis* (Con.).
Grammysia subarcuata H. & Whit.

The rarer associates of this fauna are:

Chonetes setigera.
Illinoisensis ?
Pleurotomaria capillaria.
Euomphalus sp.
Callonema sp.
Rhynchonella sappho.
Orthis michelini L'Ev. (if distinct from *O. Vanuxemi*).
Glyptodesma sp.
Bellerophon mœra.

Platyceras sp.
Cyclonema sp.
Orthis leonensis.
Knorria, a fragment.
Cladochonus sp.
Orthis carinata (abundant).
Strophodonta perplana var. *nervosa.*
Taxocrinus Ithacensis.
Gomphoceras, a fragment.
"*Fucoides graphica.*"
Spirifera fimbriata (a single specimen in Station No. 60).
Spirifera mesocostalis (2d var.).
Atrypa aspera.
Orthis impressa (wide var.).
Rhynchonella orbicularis.
Discina grandis.
Mytilarca Chemungensis.

A little farther east the following species occur in the same general association:

Tropidoleptus carinatus.
Microdon bellistriatus.
Crinoid stems.
Spirifera mesostrialis (3d var.).
Phacops rana.
Dalmanites calliteles ? (a trace).
Cyrtina Hamiltonensis.
Palæoneilo bisulcata.
Loxonema styliola.
Productella speciosa.

Two zones in the formation, in the midst of the general fauna and a calcareo-arenaceous rock (Nos. 67 E and H), carry the following additional species:

Zaphrentis, sp.
Heliophyllum, near *H. Halli.*
Stomatopora, sp.
Stictopora, sp.
Tentaculites spiculus ?
Crinoid stems and some other *Bryozoa* not described.

These corals, occurring as they do mainly in the condition of casts, are of little satisfaction except as marking the presence of the genera.

Prof. James Hall early recognized the "Cyathophylloid" corals in the Chemung fauna, but, so far as I know, the species are not described, nor are any species recorded from the Chemung group of New York. (Geology N. Y., Part 4, p. 255.)

A study of this typical Chemung fauna, as exhibited a few miles

each side the Chemung-Tioga County line, reveals the following general laws as to its conditions, characteristic species, and relations to other faunas.

The fauna prevails through about 250 feet of strata. The general character of these rocks is a series of alternating shales and sands, the argillaceous ingredients generally prevailing over the arenaceous, strongly ferrous, expressed rarely in the presence of ironstone concretionary nodules, but commonly recognized only by the universal iron-stain these rocks show upon weathering, and the rich, brownish-yellow color of the soil produced by their disintegration.

Near the beginning of the fauna, the shales tend to assume a fissile character, associated with the presence of the Lingula subfauna before mentioned.

As the fauna has reached its maximum development, a calcareo-arenaceous deposit appears carrying a rich coral and bryozoal subfauna, which reappears again toward the close of its prevalence in this area, each time marked by the continuance, for longer than usual, of undisturbed conditions favorable to the deposit of thick, solid sandstone strata. These sandstones must have been relatively local, as they vary both in thickness and in the character of the deposit, when followed along for even a few hundred feet of continuous exposure.

The Chemung fauna is recognized for a thickness of full 300 feet of strata, and the coral sandstone occurs three times in the series at Lower Chemung Narrows, and was recognized twice at the Upper Narrows. Since this sandstone is calcareous, and is marked by the presence of Cyathophylloid corals and Bryozoa, associated with the Chemung Brachiopod fauna, it becomes an important stratum in the comparison of separate sections.

In the several localities measured, the first and third coral sandstones are separated by about 250 feet of strata.

The second sandstone is in Station No. 67, about 15 feet above the first.

These sands vary considerably in thickness, and when a cliff of a few hundred yards is exposed, the corals may be abundant at one end of the cliff and no trace of them at the other, the sandstone seam itself also breaking up into alternating thin layers of shale and sandstone, and losing in great measure the calcareous character. For these reasons I have given average measurements.

There appear to have been two stages in the series in which this coral subfauna was locally abundant, and they were probably confined to limited areas in the form of shallow basins. They were separated by an average of 225 feet of shales, the majority of which was comparatively barren, but with the second incoming of the coral sandstone the principal Chemung Brachiopods returned, though not so abundantly as at first.

In some localities these sandstones are thick-bedded and form consid-

erable quarries of fair building stone. As far as determined, the highest sandstone was the more fully developed and contains the thicker bedded sandstone. Though it is possible that in some area the first two sands may have been continuous, forming 15 or 20 feet of sandstone.

Above the horizon of this upper sandstone no good exposures of the strata were found on this meridian until passing the State line and reaching Ulster, Bradford County, Pennsylvania.

In the cuttings made through the rocks by Cash Creek, exposures of Upper Chemung strata were examined. Here at my Station No. 81 a sparse fauna was obtained in a thin, semicalcareous, coarse sandstone containing considerable amount of large fragments of fossil wood and fish bones, with occasionally small pebbles. In Bradford County, Pennsylvania, the folds of the rock masses have become quite marked, as was reported by Mr. Sherwood in the Pennsylvania report, second survey, Report G.

The exposure at Cash Creek is at about the same altitude as that at Chemung Narrows, but is situated near the axis of the Blossburg Mountain Synclinal of Sherwood's Report G, p. 44.

The relation of the strata to those exposed at Chemung Narrows is a matter of calculation, and though they are certainly higher, stratigraphically, than the latter I feel no confidence in exact figures given to express the relative position.

Examination of the series farther west in the same county leads me to believe that the Ulster beds are situated within 300 feet above the upper coral sandstone of Chemung County, New York, and that there is no abundant Chemung fauna between. Further investigations may disprove this opinion, but I think it is very doubtful if the few traces of Chemung species found further south are any higher in the series than these Ulster beds.

The fauna of Station No. 81 C is as follows:

Spirifera mesocostalis.
Ambocœlia umbonata var. *gregaria.*
Strophodonta Cayuta.
perplana? var. *nervosa*?
Streptorhynchus Chemungensis.
Chonetes sp.
Spirifera, like sp. *Carteri*, but having some features similar to *Syringothyris*, and too imperfect to determine with certainty.
Crinoid stem, ¼ inch in diameter, and resembling those of Sub-Carboniferous species.
A small *Rhynchonella.*
Fragments of fish-bones.
Fragments of wood.
A few small pebbles were also seen.

This is plainly an Upper Chemung fauna. It exhibits also traces of

nearness to the conglomerate and the conditions characterizing the Catskill group.

In regard to the position in the series to which the fossiliferous beds in Franklin Township should be referred, I am in doubt. (See 2d Geol. Surv. Penn., G, p. 37.) The relation which the beds may bear to the red "Catskill" rocks above does not help the matter, since it is pretty well proven that these red rocks began to intrude themselves into the marine deposits at quite different stages in the series of different localities.

Up to the decline of the typical Chemung fauna my investigations along this meridian gave me reasonable satisfaction; but with the approach and intrusion of the coarse reds and grays the faunas were much confused and broken up. It is probable that except for local areas the majority of the fauna was destroyed.

In order to a clear understanding of the final history of these marine Devonian faunas, it will be necessary to study them in some area where these red beds (which, like the old reds of Great Britain, were probably deposited in fresh or brackish water) do not interrupt the continuity.

The elevation of land, which was evidently taking place over this area at this time, produced in some cases shore conditions where conglomerates were deposited, and in others great land-locked basins, from which, with the total or partial exclusion of salt water, the marine fauna rapidly perished.

Wherever the shores, produced by the elevation, were mere extensions of mainland with rocky exposure, we may suppose that beds of conglomerate might result; but where the land was produced by bringing the bottoms at a distance from land up to the surface, we may suppose that the nature of the deposits would not be greatly changed, except in so far as the shutting off the direct action of the sea would affect them chemically.

So long as the Chemung fauna found congenial conditions of life outside, it is reasonable to infer that its species might occasionally be intruded into these basins and thus appear interstratified with red rocks. That there was such lifting of the marine bottom to the surface, in regions where the red rocks precede conglomerate or coal, is shown by the irregular bedding and channeling of the beds, with very little change in textural qualities of the deposits which preceded the red "Catskill" deposits. Where the Chemung conditions follow up to the conglomerates, as in Western New York, this irregular bedding does not occur till the shore conditions of the conglomerate were actually present.

The present section alone does not give us the data for determining the order of the faunas in this upper part of the Devonian series.

I hope at some future time to be able to clear up this point by applying to it the results of study upon other sections.

After leaving the last fauna at Ulster, I estimate that there are ap-

proximately 1,000 feet of coarse reds and grays and conglomerates before reaching the Barclay coal, which lies some 2,000 feet above the sea. (2038. 2d Geol. Surv. Penn., G., p. 13.)

The "Ithaca group" was regarded by Mr. Vanuxem, the geologist of the third district, in 1842, as one of the primary subdivisions of the Erie division. (See Geol. N. Y., 3d Dist., p. 174.)

In 1841 Professor Hall expressed the opinion that the separation of this from the typical Chemung group was not supported by comparison of the fossils; and in 1843, in the report of the fourth district, he discarded the Ithaca group, regarding it as identical with the Chemung group, as represented along the Chemung River. (See Geol. N. Y., 4th Dist., p. 250.) The reason given was "the impossibility of identifying them as distinct by any characteristic fossils." This opinion has prevailed ever since.

Although the faunas are very similar, there can be no doubt that along the present meridian they represent two distinct geological stages. That they blended in some measure further east may be possible, in the same way that it is probable that on going westward the Marcellus and Genesee stages blended.

Although I do not doubt that the Ithaca fauna is an early stage of the Chemung fauna, I am persuaded that the two may be readily distinguished by their fossils.

That the typical Chemung fauna is thus distinct from that of the Ithaca group and characteristic of a later stage, is shown, palæontologically, by the following considerations:

The genera *Spirifera*, *Orthis*, *Strophodonta*, and *Productella* are common to both faunas, and are represented by numerous individuals at almost any fossiliferous exposures of either group. But for each genus the species are different. *Spirifera* is represented in the Ithaca group by *Sp. mesocostalis* var. *acuminata* and the first variety of *Sp. mesostrialis*.

The Chemung group is characterized by *Sp. disjuncta*, *Sp. mesocostalis* 2d var., a large, coarsely plicated, broad form, and *Sp. mesostrialis* 2d var., the wide mucronate form, neither of which is seen in the Ithaca group.

Orthis, in the Ithaca group, is *O. impressa* of the narrow variety, rarely wider than long.

In the Chemung group *O. impressa* is the 2d var.; wide form, with broad sinus; also there are *O tioga* and *O. carinata*, neither of which is known in the Ithaca group.

The *Strophodontas* of the Ithaca group are *Str. mucronata*, and the closely allied variety of *Str. perplana* var. *nervosa*.

In the Chemung group *Str. cayuta* is the prevailing form, and a coarser, more irregular form of *Str. perplana* var. *nervosa*.

Str. demissa is reported from both groups, but is extremely rare in either.

Productella is represented in the Ithaca group by *P. speciosa*, and a

small form I have identified as *P. speciosa*, small variety. In the Chemung it is *P. lachrymosa* and *P. costatula.*

Besides these genera, *Streptorhynchus* is common in the Chemung group, and it is extremely rare, if it appear at all, in the Ithaca group.

Ambocœlia umbonata var. *gregaria* is abundant in some stages of the Chemung group, but is rarely ever seen at Ithaca. The latter two forms are seen below the Ithaca group, hence their absence there is evidence of modified fauna, rather than extinction.

These differences in the prevailing varietal, or specific characters of common genera, which (as genera) are known to be common for a considerable range below and above the stages under consideration, I take to be more reliable evidence of actual difference in horizon than would be any number of distinct species of different genera in the two faunas.

SUMMARY.

The following is a summary of the order and general relative position of the faunas from the Genesee slate to the Barclay coal, which my present knowledge leads me to believe is true for the meridian passing through Ithaca, N. Y., running southward.

1st. Genesee slate fauna.

2d. Portage group fauna, distributed through approximately 1,300 feet of strata, but interrupted by the intrusion of the Ithaca fauna and several sub-faunas.

3d. Chemung fauna, occupying at least 1,200 feet of strata, with perhaps two sub-faunas, and driven out or destroyed by the presence of the conditions marked by the deposit of red and gray Catskill rocks.

Within the limits, assigned to the Portage group in the western part of New York State, I believe should be included for this meridian all those deposits lying between the Genesee shale and the lowest yellow-brown shale and sandstones which carry the true Chemung group fauna.

This series, as a whole, may be described as arenaceous, dark-colored shales with the *Cardiola speciosa* fauna, toward the top running into wave-marked, tough, arenaceous deposits, almost totally barren, so far as known.

The passage, between this series and the true Chemung, is stratigraphically indistinct, but in a general way it may be recognized by the clearer separation of the argillaceous from the arenaceous deposits after passing the line, and the appearance of lighter-colored sandstones in the midst of softer argillaceous shales, in which iron nodules and iron stains become more conspicuous than below.

The shales of the Portage below are thinner and of more greenish tint, and its sandstones are darker in color and thin, tough, and wave-marked or flaggy. Palœontologically, however, the transition is more marked.

The upper part of the Portage appears to be utterly barren except

in an occasional thin stratum of green shale, a *Cardiola speciosa*, or a small *Palæoneilo*, or *Leda* may appear.

As soon, however, as we reach the true Chemung rocks we meet large *Productella lachrymosa*, *Ambocœlias*, and *Spirifers* of the Chemung types. Within the limits of the Portage group, as so defined, we find in this area several secondary faunas intruding, but with limited geographical distribution, some of which we are able to trace toward, if not to, their origin.

The first of these is the *Cladochonus* fauna of Station No. 48, an outlier and forerunner of the Ithaca fauna, and entering this area from the east and traced as far west as Seneca Lake.

The second is the *Spirifera lævis* fauna, also coming in from the east, and not known west of Cayuga Lake Valley.

The third is the *Lingula* fauna of the Ithaca shale, which I think may be connected with the general black shale fauna, and if so, it was intruded from the west.

Fourth, is the thin recurrent Hamilton fauna, which may have been some little colony that had escaped destruction, or remained after the general retreat of the Hamilton fauna.

It is not improbable that evidence will be found proving conclusively that, after the general prevalence of the Portage group and its fauna, the Hamilton conditions and more or less of its fauna may have continued to live in some region east and north of this area.

Fifth, was the general Ithaca fauna, with a single coral, sub-fauna, in its midst found in the one heavy bedded sandstone of that group. This sandstone is semi-calcareous where the coral occurs, and in places it is a mass of comminuted, broken shells. In this sub-fauna, also occurs the Terebratuloid fossil *Cryptonella Eudora*.

The Ithaca fauna was substantially a Brachiopod fauna, with the characteristic forms *Spirifera mesocostalis*, *Orthis impressa*, *Strophodonta mucronata*, and *Cyrtina Hamiltonensis*, and others.

This fauna is the regular successor of the Hamilton fauna, and is intermediate between it and that of the Chemung group. It appears to have come in from the east. It prevailed during the deposition of two to three hundred feet of arenaceous shales; the coral sandstone fauna came in before its maximum development. At the close of its occupation of this area a dark, fissile shale with a *Discina* fauna came in. This I believe to be another outlier of the Genesee shale conditions, whose center at this time must have been toward the western part of the State.

A few feet above this dark shale the representatives of the *Spirifera lævis* fauna reappeared, among them a well-developed specimen of *Spirifera lævis*. Above this point the rocks are relatively barren except for the occasional presence of a small specimen of *Productella* or *Spirifera*, or traces of the Portage fauna, until the incoming of the Chemung fauna, three or four hundred feet higher up.

The Chemung fauna came in gradually, and before it was thoroughly

introduced, there appeared a dark, fissile shale very similar to that underlying the Ithaca fauna. This dark shale carried a Lingula fauna, the principal species of which were the same as those in the Ithaca dark shale, but the associated forms are of the upper Chemung types, showing it to be a recurrence at a later stage, and not identical with the Ithaca-Lingula fauna, as the stratigraphical evidence also clearly indicates.

Not long after the Chemung fauna had fully occupied the area, a massive, often calcareous sandstone was deposited, containing an interesting coral sub-fauna. Again, some 250 feet higher up in the series, and near the close of the dominance of the Chemung species, the coral subfauna reappears under like conditions.

Above this zone Chemung species are rare, but are the only marine forms to appear at all till after the deposit of the red sands and conglomerates.

Toward the close of the Chemung period there were disturbances over this area which made it impossible, with the present knowledge of the series, to define the passage of the Chemung fauna into anything higher up.

Even after traces of the red "Catskill" rocks were deposited, some of the Chemung species remained. The reds, purples, and grays, and the white conglomerates, although some thousand feet in thickness, and carrying some fish bones and scales, and fragments of plants, show very little, if any, trace of marine life.

This series is terminated by the marshy land depositions of the Barclay coal mine.

I am under obligations to the Director of the United States Geological Survey for the insertion of this report in this place. The material was collected, and the work done on it privately in connection with my duties in Cornell University. The nature of the investigations having come to the notice of the Director, I was placed in position to continue them under the auspices of the Survey. This article is therefore included here as the first of a series of articles upon the comparative palæontology of the Devonian and Carboniferous faunas.

Although I am responsible for the opinions here advanced, I owe much to the suggestions and inspiration received from others. Especially valuable have been the numerous papers in which have been discussed the problems connected with the Devonian and Old Red Sandstone deposits of Great Britain and Europe. I may mention especially those of Messrs. Etheridge, Edward Hull, and T. M. Hall; also the papers of M. Jules Gosselet upon similar series in North France, and the interesting works of Joachim Barrande in other fields.

The writings of Professor Hall have been of great value, and the suggestions appearing all along in his works have often been in mind during these investigations.

ITHACA, N. Y., *December*, 1883.

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III. Geology of the Comstock Lode and Washoe District, with atlas, by G. F. Becker. 1883. 4°. XV, 422 pp. 7 pl. and atlas of 21 sheets folio. Price $11.

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1. On Hypersthene-Andesite and on Triclinic Pyroxene in Augitic Rocks, by Whitman Cross, with a Geological Sketch of Buffalo Peaks, Colorado, by S. F. Emmons. Washington, 1883. 8°. 42 pp. 2 pl. Price 10 cents.

2. Gold and Silver Conversion Tables, by A. Williams, jr. Washington, 1883. 8°. 8 pp. Price 5 cents.

3. On the Fossil Faunas of the Upper Devonian along the meridian of 76° 30′, from Tompkins County, N. Y., to Bradford County, Pa., by Henry S. Williams. 1884. 8°. 36 pp. Price 5 cents.

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ON

MESOZOIC FOSSILS

BY

CHARLES A. WHITE, M. D.

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ON MESOZOIC FOSSILS.

By Charles A. White.

PTION OF CERTAIN ABERRANT FORMS OF THE IDÆ FROM THE CRETACEOUS ROCKS OF TEXAS.

gh the Cretaceous strata of Texas have long been known to great and peculiar interest, comparatively little systematic s yet been given to their paleontology; and their place in the is series, especially that of the lower portion of the formation not yet satisfactorily known. Indeed, the relation of the Cre- ocks of Texas to those of the other portions of the continent the northward is yet doubtful; and as it is expected that the United States Geological Survey will soon take up the ic study of the geology of Texas, I shall not now attempt any liscussion of the subject. However, as this article is devoted scription of certain forms, the like of which in North America n found only in the Cretaceous rocks of Texas, it is proper that mention certain conspicuous differences between the fauna of n Cretaceous and the faunas of the rocks of that period in all ts of the continent, so far as they are yet known.

'aunal differences are so great that they are suggestive of a in the age of the strata containing the respective faunas; but spect that they are due largely to climatic or other causes ve controlled the development and geographical distribution . The extent of these faunal differences can of course be fully ly by a complete series of illustrations, such as can be prepared many years of paleontological labor. Therefore only the more xamples will be mentioned. The Actinozoa are represented derable number of species and genera in the Texan Cretaceous, y a few traces of the whole class have yet been discovered in ata of that period to the northward. Several families of Ech- well represented in the Texan strata, while only two or three s, of one species, are yet known to exist in all the region to ward. The Rudistæ are yet known only in the southern Cre- trata, where they are not uncommon. The same is true of the forms of the Chamidæ, such as are described in this article; ot regard the shell described by Conrad from the Upper Mis- er region under the name of * *Requienia senseni*, as belonging

* See Jour. Acad. Nat. Sci., Philad., Vol. II, p. 299.

to either that or any related genus. Certain genera also are represented in the southern, and not in the northern districts. Thus *Exogyra* and *Gryphæa* are abundantly represented in Texan and other southern Cretaceous strata, but they have not been found in rocks of that age north of about latitude 35°, in the interior part of the continent.

The fossils described in this article were collected by Mr. George Stolley from the vicinity of Austin, Tex., and sent by him to the Smithsonian Institution; and permission to use the same has been given by the Director of the United States National Museum. The three new forms herein described were found associated together; but the *Caprotina* (=*Requienia*) *texana* of Roemer was not found associated with them in the same layers. The collection containing the new forms is a very interesting one, but it is made up largely of those three species. A few examples of *Lucina*, *Cerithium*, and other mollusks were found associated with them, and also a species of *Cladophyllia*. The condition of preservation of these fossils is peculiar, nearly all of them being pseudomorphs in almost pure calcite. This condition, while it has preserved the form of the shells quite completely, has entirely obliterated the minute structure of the test which, in the species here described, it would be desirable to know.

Some diversity of opinion has prevailed among paleontologists as to the true zoological position of the forms which are described on the following pages, and other forms closely related to them; but it is now generally agreed that they have close affinities with the Chamidæ, to which family they are here referred. I think, however, that while they all ought to be placed near *Chama*, the forms which are usually ranged under the generic names *Diceras*, *Requienia*, *Monopleura*, *Caprotina*, &c., ought to be separated from the typical chamidæ as one or more groups or subfamilies.

Genus REQUIENIA Matheron.

REQUIENIA PATAGIATA (sp. nov.).

Plate I, Figs. 1–8; and Plate II, Figs. 1–4.

Shell, irregular in shape; test, moderately thick; left valve, much larger than the right, spiral, the spire being more or less distorted and much elevated, consisting of two or three volutions; the scar of attachment at the apex always present, but sometimes very small; the upper side of the spire flattened, broad; the under side regularly convex, meeting the flattened upper side at a distinct peripheral angle, which angle usually bears a prominent, thin, more or less wrinkled carina or fringe. Right valve more regular in shape than the left; the under side convex and the upper flattened, the two sides meeting at an angle similar to that of the left valve, but it is not quite so acute, and it is not fringed; the spire sometimes nearly flat, but usually more or less elevated, making about two volutions; ligamental groove narrow, and

having, especially upon the larger valve, somewhat the appearance of a spiral suture. Hinge strong, the principal tooth of the right valve being large and prominent. Surface marked by irregular lines and wrinkles of growth.

It is difficult to state the dimensions of a shell so irregular in shape as those of this species are; but the extreme measurement of an adult shell may be given as about 55 millimeters.

The irregular shape of the shell seems to be in a good degree the result of a natural habit of the mollusk, but it was in many cases evidently the result, in part, of the contact which it had with other substances. The beak of the left valve is usually distorted by reason of its early attachment to a foreign body; and shells of its own or other species were frequently attached to its surface, adding still further to its disfigurement. (Museum number, 12363.)

REQUIENIA TEXANA Roemer.

(Plate II, Figs. 5, 6, and 7.)

Caprotina texana Roemer, 1852; Kreidebildungen von Texas, page 80, Plate V, Figs. 2*a*, 2*b*, and 2*c*.

Shell very inequivalved, thin, smooth, subtriangular; the larger valve coiled to the right, the terminal volution forming a low, small coil; the upper side flattened, and marked by obsolete spiral lines which are crossed by slightly undulating lines of growth; outer side regularly convex, and marked by oblique lines of growth. The smaller valve suborbicular, carinated, concave; the umbo forming a small spiral of about one volution.

The foregoing description is a free translation of Professor Roemer's original description, and the three figures on Plate II are copies of his illustrations. The collection which Mr. Stolley sent to the Smithsonian from the region round about Austin, Tex., contained numerous examples of this species, but they have all suffered injury by pressure of the somewhat fragile shell. These specimens show that the species reached a considerably larger size than that which is indicated by Professor Roemer's figures; and also that the larger valve was usually, if not always, more or less distorted when fully grown. This species differs from *R. patagiata* in reaching usually a larger size, in having a less angular aspect, its test proportionally thinner, the spire of both valves less prominent, and in the peripheral angle being without a prominent fringe.

Other species which are probably referable to the section of the Chamidæ to which the shells herein described belong, are published by Roemer in his Kreidebildungen von Texas; but our collections do not at present contain any representatives of them. (Museum number, 12366.)

Genus MONOPLEURA Matheron.

MONOPLEURA MARCIDA (sp. nov.).

(Plate III and Plate IV.)

Shell irregular; right valve deeply elongate, sometimes slender, mc or less distorted, and usually a little twisted; rudely subelliptical transverse section; the somewhat flattened anterior side and gent convex posterior side connected by a more abrubt rounding above a below. Scar of attachment sometimes large, occasionally extendi along a large part of one side of the valve, but sometimes it is ve small; ligamental groove extending from the apex to the hin margin, distinct, linear, its presence made more conspicuous by t greater elevation of its posterior than of its anterior border. Le valve flat or gently convex; more or less straightened on the anteri side, and otherwise conforming to the margin of the right valve. Su face of the left valve marked by concentric lines of growth, and l numerous radiating irregular raised lines; that of the right val marked by more or less strong lamellations and lines of growth, a by occasional longitudinal lines, similar to those which mark the oth valve. Hinge moderately strong; the two teeth and hinge plate of tl left valve strong and prominent, and the tooth of the right valve cc respondingly prominent. The individuals sometimes grew separatel but often in clusters, attached to some foreign body or to each other.

The largest right valve in the collection has an extreme length of millimeters, and its greatest diameter at the margin 22 millimeter (Museum number, 12364.)

MONOPLEURA PINGUISCULA (sp. nov.).

(Plate V.)

Shell very irregular; right valve deep, capacious, often distorted, a sometimes more or less twisted; transverse section of the valve rude subelliptical; scar of attachment sometimes large, but often smal ligamental groove linear, extending from the apex to the hinge margi sometimes distinct and sometimes obscure, sometimes nearly straigl and sometimes irregular and oblique. Left valve more or less strong convex, its umbonal portion being prominent and strongly incurve and projecting beyond the hinge line. Test thick and strong in tl dorsal portion and thin in the ventral. Surface of both valves havi a plain aspect, but in the case of each it is marked by more or less di tinct concentric lines and undulations of growth, with occasional fai traces of radiating lines, but the latter are never so distinct as they a upon the left valve of *M. marcida*. Hinge strong; the tooth of the rig valve large and prominent, and those of the left valve supported up a strong plate.

The longest right valve in the collection measures about 50 millim

ters, but the shape and dimensions of the shell are so variable that it is impracticable to give any precise measurements.

Compared with the preceding species, with which it is associated, this species is more robust, has a smoother aspect, the left valve is much more prominent and convex. The right valve is proportionally more capacious, and never has that slender, rough, and angular aspect which that of the other species presents. The general aspect of this species, especially as regards its convex and curved left valve, is much like that of some species of *Caprotina*, but the character of the surface of both valves and that of the hinge seem to agree essentially with *Monopleura*. All the specimens in the collection appear to have grown separately, and not in clusters, as *M. marcida* often did. (Museum number, 12365.)

ON A SMALL COLLECTION OF MESOZOIC FOSSILS COLLECTED IN ALASKA BY MR. W. H. DALL, OF THE UNITED STATES COAST SURVEY.

During the years 1840–'42, Ilia Wosnessensky, while making zoological collections along the west coast of North America, obtained also a few fossils from Alaska. These were published by Constantine Grewingk, in Verhandlungen der Russisch-Kaiserlichen Mineralogischen Gesellschaft zu St. Petersburg, for the years 1848 and 1849, pp. 344–347. Those which Wosnessensky obtained from the Bay of Katmai, on the southern coast of Alaska, Grewingk referred to the Jurassic; and some others, from Kodiak Island, he referred to the Tertiary. In the work presently to be noticed, Eichwald, however, declares the former to be of Neocomian, and the latter of Turonian age.

Alaska and the Aleutian Islands were visited during the years 1847–'52, by Peter Doroschin, a Russian mining engineer, who made some important collections of Mesozoic fossil mollusks from various localities in that region. Professor Eichwald, in 1872, published these fossils in St. Petersburg, together with other fossils which Doroschin had collected in the region of the Caspian Sea, the title of the work being, "Geognostisch-Palaeontologische Bemerkungen ueber die Halbinsel Mangischlak und die Aleutischen Insel." In that work, under the subtitle "Fossile Thiere des Neocom und Gault," pages 158–200, he describes sixty-two species of Mesozoic fossil mollusks from Alaska and the Aleutian Islands, and devotes sixteen plates to their illustration. It is this portion of Doroschin's collection that I propose to more especially refer to in this article, because I have now to consider a small collection of fossils from Alaska which probably came from the same formation. Eichwald is positive in his reference of this part of Doroschin's collection mainly to the Neocomian division of the Cretaceous, but in part to the Gault. He identifies certain species found in Alaska with some of those which have been long known in Russian strata, and which Keyserling referred to the Jurassic. Geologists have generally accepted this reference; but in the work on Alaskan fossils just referred to, Eichwald states that the Russian strata which bear the fossils alluded to are of Neocomian, and not of Jurassic age. He also regards the Russian and Alaskan strata which bear those fossils respectively as geologically equivalent, and makes at least one Alaskan species identical with a Russian one.

Prof. Jules Marcou* has called attention to the fact that there is a

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* Explication d'une seconde edition de la Carte Géologique de la Terre: by Jules Marcou; pp. 121 and 137-140.

commingling of Jurassic and Lower Cretaceous types in both the Russian and Alaskan strata which have just been referred to; and that a similar condition of things exists in the island of Saghalin, and other portions of Northern Asia.

The Mesozoic collections which were made by Doroschin in Alaska are very important, but Eichwald's publication gives no comprehensive sketch of the geology of the Alaskan region. He refers some of the fossils from Chasik Island to the Gault, and some to the Neocomian; but he gives no description of two separate Mesozoic formations there. For want of definite information as to the geology of the region one cannot feel certain that all the fossils which Eichwald refers to the Neocomian really came from one and the same formation. If those fossils are all strictly of the same epoch, I think Eichwald's reference of them to the Neocomian is not unreasonable, because so many of those mollusks are of Cretaceous types; and yet Marcou's statement that there is a commingling of Jurassic and Neocomian types in those northern Mesozoic strata seems to be well supported. It has been thought by some paleontologists that *Aucella* is confined to Jurassic strata; but this genus is now known to exist in strata of undoubted Cretaceous age; and if the opinion of Eichwald is accepted, it will appear that *Aucella* is more characteristic of the Cretaceous than of Jurassic strata. At least it is plain that we cannot now rely upon the presence of that genus as affording any proof of the Jurassic age of the strata which contains it.

During the prosecution of his work upon the United States Coast and Geodetic Survey along the western coast of the Alaskan Peninsula in the year 1874, Mr. W. H. Dall made a collection of Mesozoic invertebrate fossils which are of the same age as, at least a part of, those which were collected by Doroschin. In his notes, Mr. Dall designates the locality at which they were discovered, as "Fossil Point, Port Möller"; and indicates its position as approximately in longitude 160° 31′ west; and latitude 45° 14′ north. The collection consists mainly of a species of *Aucella*, which is evidently identical with the forms which are figured on Eichwald's Plate XVII (*loc. cit.*); the specimens of which collection, like those of Doroschin's, are all in the condition of natural casts. The collection also contains a single valve of a species of *Cyprina*, and some fragments of a remarkably slender Belemnite. This collection is now the property of the United States National Museum; and permission to use it in the preparation of this article has been given by the Director of the Museum.

Two years previous to Mr. Dall's labors in Alaska, the same region was visited by M. Alph.-L. Pinart, who obtained some fossil shells of Mesozoic age upon the eastern side of the Alaskan peninsula. These fossils evidently came from the same formation that furnished the shells which are figured by Eichwald on his Plate XVII. M. Pinart, in his report, entitled "Voyages a la cote Nord-Ouest de l'Amerique," desig-

nates the two localities from which the fossils just mentioned were obtained, as "le baie d'Amakshak, pres Soutkhoum; et le baie de Nakkhalilik, pres du volcan Chigihinagak." The former locality is approximately in latitude 56° 50′; longitude 159° 40′ west; and the latter, in latitude 56° 58′; longitude 159° 10′ west.

The fossils which were collected by M. Pinart were discussed by M. P. Fischer, in the report just cited, under the subtitle, "Sur quelques Fossiles de l'Alaska," pages 33–36, Plate A. Only two species were obtained by Pinart from the localities just mentioned, one of which Fischer places under *Pholadomya* (*Homomya*), but he gives it no specific name. The other he refers to the *Aucella concentrica* of Fischer.

I am in some doubt as to whether Dall and Pinart collected from the same locality in any case, but I think it probable that Dall's locality on the western side of the Alaskan peninsula, and Pinart's localities on the eastern side, had all been previously visited by Doroschin. It is quite evident, however, that the strata from which they respectively collected specimens of *Aucella* all belong to one and the same horizon. If the Mesozoic collections of Dall and Pinart, and also that part of Doroschin's collection which Eichwald refers to the Neocomian, all really came from one and the same formation, the fauna thus represented has certainly much of Cretaceous, as well as of Jurassic character. This is true, even after excluding those species of Doroschin's collection which Eichwald refers to the Gault, and of course all that he refers to the Turonian. Still, this fauna has enough of Jurassic character, according to the views which have hitherto been generally entertained by paleontologists, to suggest that the strata which bear it occupy a transitional position, as indicated by Marcou. According to views now generally held by naturalists, transitional faunas ought to occur between all those which especially characterize each epoch respectively, and the suggestion of such a case for this Alaskan fauna seems to me to be reasonable.

Certain of the Cretaceous strata of Texas have been doubtfully referred to the Neocomian, but with this exception, no North American strata south of the northern limit of the United States have hitherto been referred to the lower division of the Cretaceous series, and a broad hiatus has appeared to exist between those northern strata and the lowest of the Cretaceous rocks yet known south of the limit just referred to. Within a few years past, however, the labors of Dr. George M. Dawson in the coast region of British Columbia, have brought to light some series of fossils which Mr. Whiteaves thinks prove the strata carrying them to be of the age of the Middle Cretaceous, and the upper part of the Neocomian. (See Trans. Roy. Soc. Canada, Sec. IV, 1882, p. 81.) Lately also, some Ammonites have been sent to the United States National Museum by Mr. James G. Swan, from Skonum Point, British Columbia, which are suggestive of the earliest Cretaceous, if not of Jurassic age, and they will doubtless be found to hold an important relation to the Cretaceous strata examined by Dr. Dawson, and

also to the Alaskan Mesozoic strata which bear the fossils described in this article. In fact, it seems now to be evident that it is along the west coast of North America, from California to Alaska, that we are to look for the lower portion of the Cretaceous series on this continent. While these northwestern strata seem to be certainly older than the oldest of the Cretaceous strata in all that broad region occupied by Dakota, Montana, Wyoming, Colorado, and Utah, it is nevertheless true that in all that great region, where the Cretaceous and Jurassic strata are both exposed, the former seems always to rest conformably upon the latter. This apparent conformability over so wide a region shows how cautious one ought to be in concluding that deposition has been continuous in all cases where there is perfect conformity of strata, even if it is of great extent.

A consideration of these Alaskan fossils would be much more interesting if we had a satisfactory knowledge of the stratigraphical geology of the region from which they were obtained. A sketch of the geology of the Alaskan Peninsula, which, although brief, is the best with which I am acquainted, is given by Mr. Dall in the American Journal of Science for July, 1882, pp. 67 and 68. This sketch shows the relations of the rock-formations of that peninsula to each other; and one may obtain from it also an indication of the formation from which the fossils described in this article were obtained.

MOLLUSCA.

Genus AUCELLA Keyserling.

AUCELLA CONCENTRICA Fischer (variety).

(Plate VI, Figs. 2-12.)

The different species of *Aucella* which have been recognized and published by various authors present so few salient characteristics which distinguish them from each other that, excepting a consideration of their general or average shape, a detailed description of any of them is necessarily hardly anything more than a repetition of generic characters. Such would certainly be the case in attempting to diagnose the form now under consideration. This form also varies so much in shape that an attempt to compare it with other published forms in that respect is also unsatisfactory. I therefore omit descriptive details, and give numerous figures, which illustrate some of the extreme shapes which this Alaskan shell assumes. The specimens which are figured on Plate VI are selected from the Alaskan collection of Mr. Dall, which has already been mentioned. A glance at these figures will show that they present almost as great a degree of variation among themselves as is usually found among the illustrations of the different species of *Aucella* which have hitherto been published by different

authors. If, for example, the specimens which are represented by Figs. 2 and 3, and 9 and 10, respectively, had been found alone and at different localities, I think few paleontologists would have hesitated to publish them as different species. The specimens are all in the condition of natural casts and molds, and therefore all the surface characteristics of the species are not shown. Fig. 12 is drawn from a gutta-percha cast, taken from a natural mold of part of a shell, and shows the strong, sharp, concentric ridges which marked the surface of the test. (The Museum record number of the type specimens is 12360.)

The numerous specimens of this collection show such a gradation of form among themselves that I cannot doubt that they are all properly referable to one and the same species. Comparing these specimens also with the figures of Alaskan forms of *Aucella* which are given by M. Fischer on his Plate A, and also with those given by Eichwald on Plate XVII (loc. cit.), I cannot doubt that they are all specifically identical with each other, nor that they all represent only one species. I have, however, some doubt as to which of the known European species of *Aucella* the Alaskan form ought to be referred to; but as it seems to agree more nearly with *A. concentrica* Fischer, I have designated it as a variety of that species.

Genus CYPRINA Lamarck.

CYPRINA? DALLII (sp. nov.).

(Plate VI, Fig. 1.)

Shell moderately large, and having the usual external aspect of *Cyprina*, as is shown by the figure on Plate VI.

The collection made by Mr. Dall contains only a single example of this form, and that is in the condition of a natural cast of the right valve. It is therefore too imperfect for satisfactory specific diagnosis, and it is named only for convenience in any future discussion of the fauna of which it forms a part. (The Museum catalogue number is 12362.)

Genus BELEMNITES Lamarck.

BELEMNITES MACRITATIS (sp. nov.).

(Plate VI, Figs. 13 and 14.)

The collection made by Mr. Dall contains some imperfect specimens of a remarkably slender Belemnite, imbedded in fragments of hard sandstone, together with some natural molds of a couple of more perfect examples. They are very slender, and taper gradually to a blunt point at the distal end. The extreme proximal end is unknown.

The very slender form of this species at first led me to suppose it to

be a species of the Pennatulid genus *Graphularia* of Edwards & Haime. It has, however, not only the usual radiate and concentric structure of *Belemnites*, but one of the examples shows plainly the cavity of the phragmocone, with a small bulb-cavity at its point. Another example shows a faint longitudinal groove along one side, such as is common in both *Belemnites* and *Belemnitella*. (Museum catalogue number, 12361.)

Dr. Eichwald, in the work already cited, describes three species of *Belemnites* from Chasik Island, and one from the Alaskan Peninsula; but the species here described differs materially from all of them in its small size and very slender form.

ON THE NAUTILOID GENUS ENCLIMATOCERAS HYATT, AND A DESCRIPTION OF THE TYPE SPECIES.

In the year 1880 Mr. E. O. Ulrich sent to the Smithsonian Institution a small collection of fossils which he had obtained from the Cretaceous strata near Little Rock, Ark. A part of these fossils were described by me in Vols. III and IV of Proceedings of the United States National Museum; but the Nautiloid shell now described was then only casually noticed. Its peculiarities were recognized at that time, and the specimens were laid aside with the hope that better material might be procured for study. Other specimens belonging to this or a closely related species were afterward collected by Mr. Lawrence C. Johnson from strata supposed to be of Cretaceous age, in Wilcox County, Alabama, but they are no more perfectly preserved than the Arkansas specimens.

Prof. Alpheus Hyatt having had in hand an exhaustive work on *Nautilus* and its allies, the Arkansas specimens were placed with him for examination. In a preliminary work of his, just published, he divides the genus *Nautilus* as it has been generally recognized, into numerous genera besides those previously proposed by other authors. To one of these groups he has given the generic name *Enclimatoceras*, and made the species here described the type of the genus. The following is his generic diagnosis, which he has also published in the Proceedings of the Boston Society of Natural History, Vol. XXII, 1884, p. 270.

Genus ENCLIMATOCERAS Hyatt.

"Enclimatoceras includes species of the Trias to the Tertiary, inclusive, which are connected by the outlines of their sutures. The whorls are involute from an early stage, and compressed. The abdomens are rounded, but become acute in many species. The sutures have prominent ventral saddles, flattened in species with rounded abdomens, and acute in those with acute abdomens; never divided by ventral lobes. The lateral lobes are deep, and the lateral saddles well marked. The ventral saddles in the young are broad, and closely resemble the ventrals of the *Hercoglossæ*, as do also the broad lateral saddles of the later larval stages in some species. There are no annular lobes at any stage in the Triassic, according to Mojsisovics. They do not seem to be present in some of the Jurassic and Cretaceous species, at least during the early stages, and are very small in some adults. The Triassic species are nearly related to *Grupoceras*, according to Mojsisovics' figures and descriptions in 'Das Gebirge um Hallstatt.' The siphon in this type is a little below the center in the young, though ventral in the adult; and this also agrees with the characteristics of *Enclimatoceras styriacus*, sp.

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EXPLANATION OF PLATES.

PLATE I.

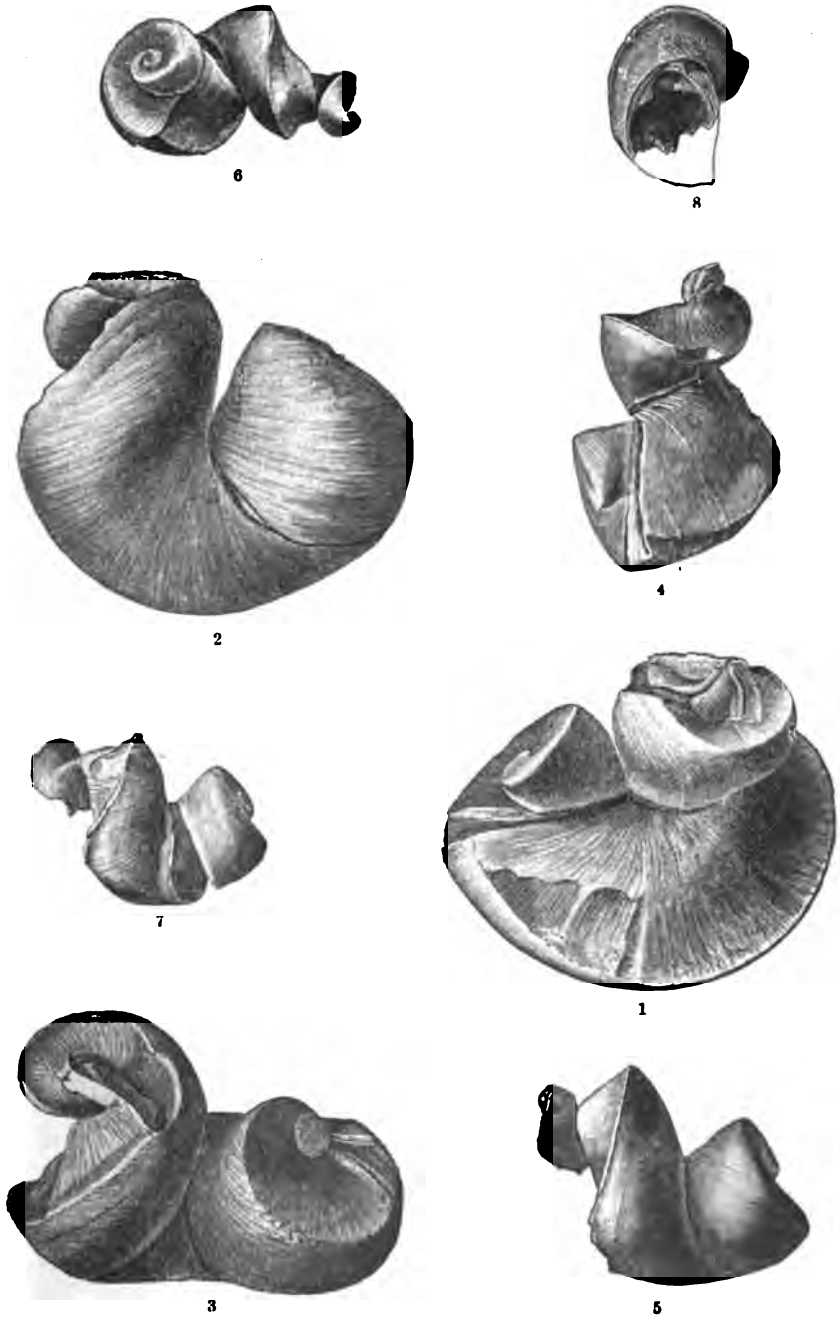
REQUIENIA PATAGIATA. (Page 6.)

FIGS. 1, 2, 3.—Three different views of one of the largest of the type specimens; both valves together.

FIGS. 4, 5.—Two views of a smaller example.

FIGS. 6, 7.—Two views of another example, showing the two valves partly separated.

FIG. 8.—A portion of a left valve, showing the hinge. All of natural size. For other figures of this species see Plate II.



REQUIENIA PATAGIATA.

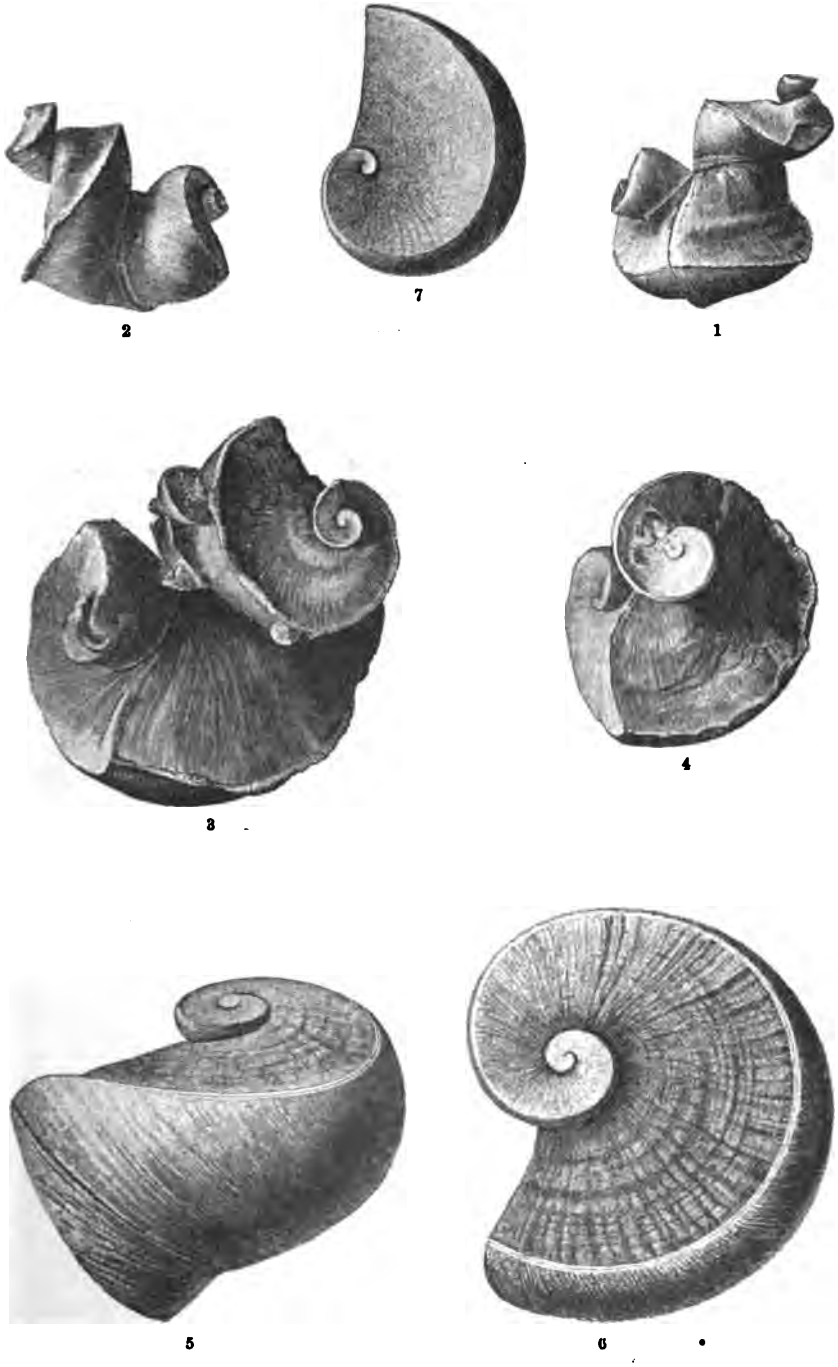
PLATE II.

REQUIENIA PATAGIATA. (Page 6.)

FIGS. 1, 2.—Two views of a small example; both valves together.
FIG. 3.—Upper view of a large and somewhat distorted example.
FIG. 4.—A similar view of a smaller distorted example. All of natural size. For other figures of this species see Plate I.

REQUIENIA TEXANA. (Page 7.)

FIG. 5.—Lateral view; the two valves together.
FIG. 6.—Upper view of the left valve.
FIG. 7.—Similar view of the right valve. Figures 5, 6, and 7 are after Roemer; all of natural size.



REQUIENIA PATAGIATA—REQUIENIA TEXANA.

PLATE III.

MONOPLEURA MARCIDA. (Page 8.)

FIGS. 1, 2.—Opposite lateral views of a cluster of individuals, the larger ones being attached to a left valve of another example.

FIG. 3.—An upper view of the same example, showing the hinge of the largest right valve, and the left valves of the other members of the cluster in situ.

FIG. 4.—Inner surface of the left valve which forms the base of the cluster represented by Figs. 1, 2, and 3.

FIG. 5.—A separate example, showing both valves.

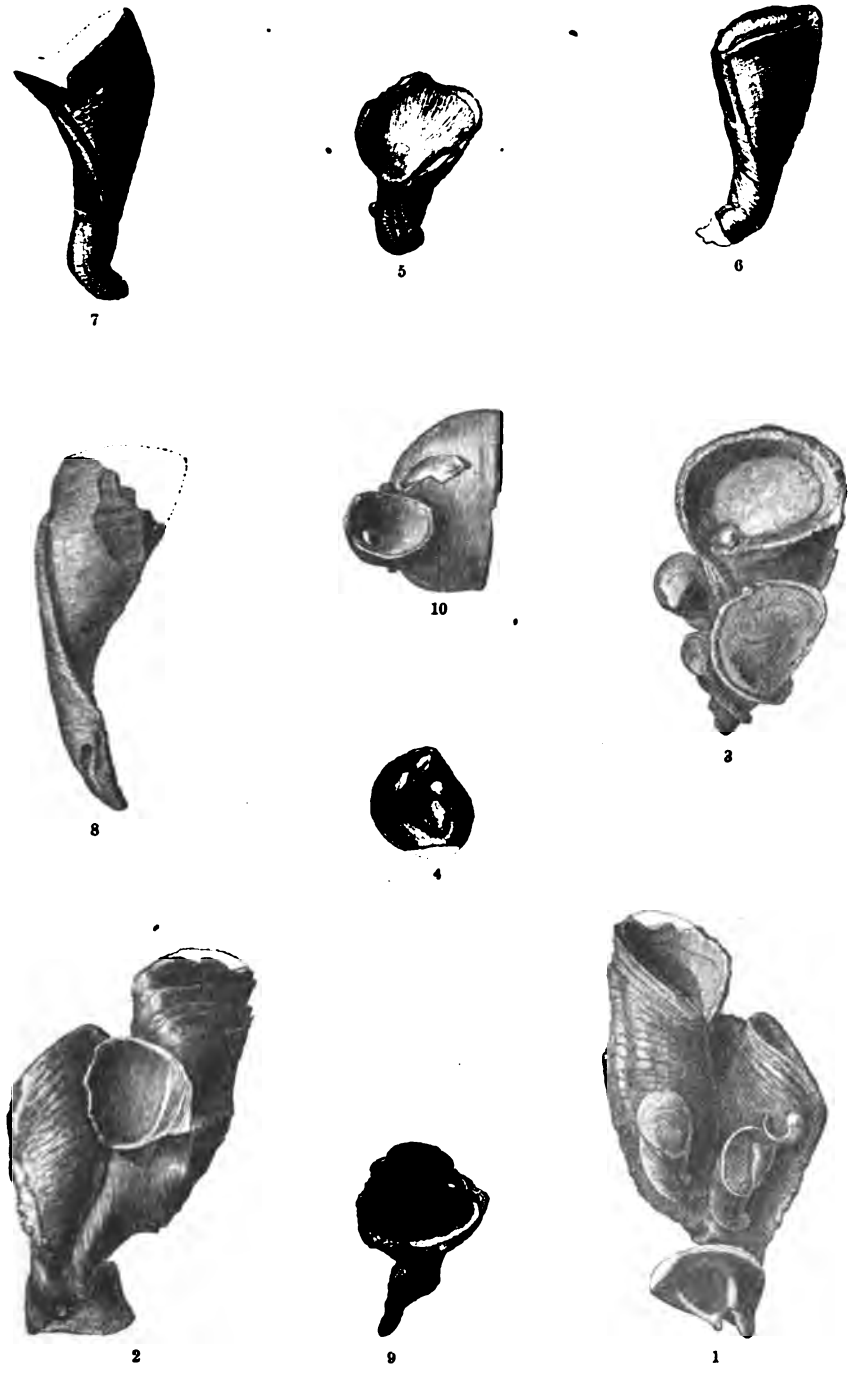
FIG. 6.—Another example, also showing both valves.

FIG. 7.—A right valve, showing the slender ligamental groove.

FIG. 8.—Another slender right valve, also showing the groove.

FIG. 9.—Interior view of the same example, showing the hinge.

FIG. 10.—A similar view of the hinge of another example, which is attached to a right valve of *Requienia patagiata*. All are of natural size. For other examples see Plate IV.



MONOPLEURA MARCIDA.

PLATE IV.

MONOPLEURA MARCIDA. (Page 8.)

FIG. 1.—Lateral view; the right valve attached to a foreign body, and the left valve bearing two young examples of *Requienia patagiata*.

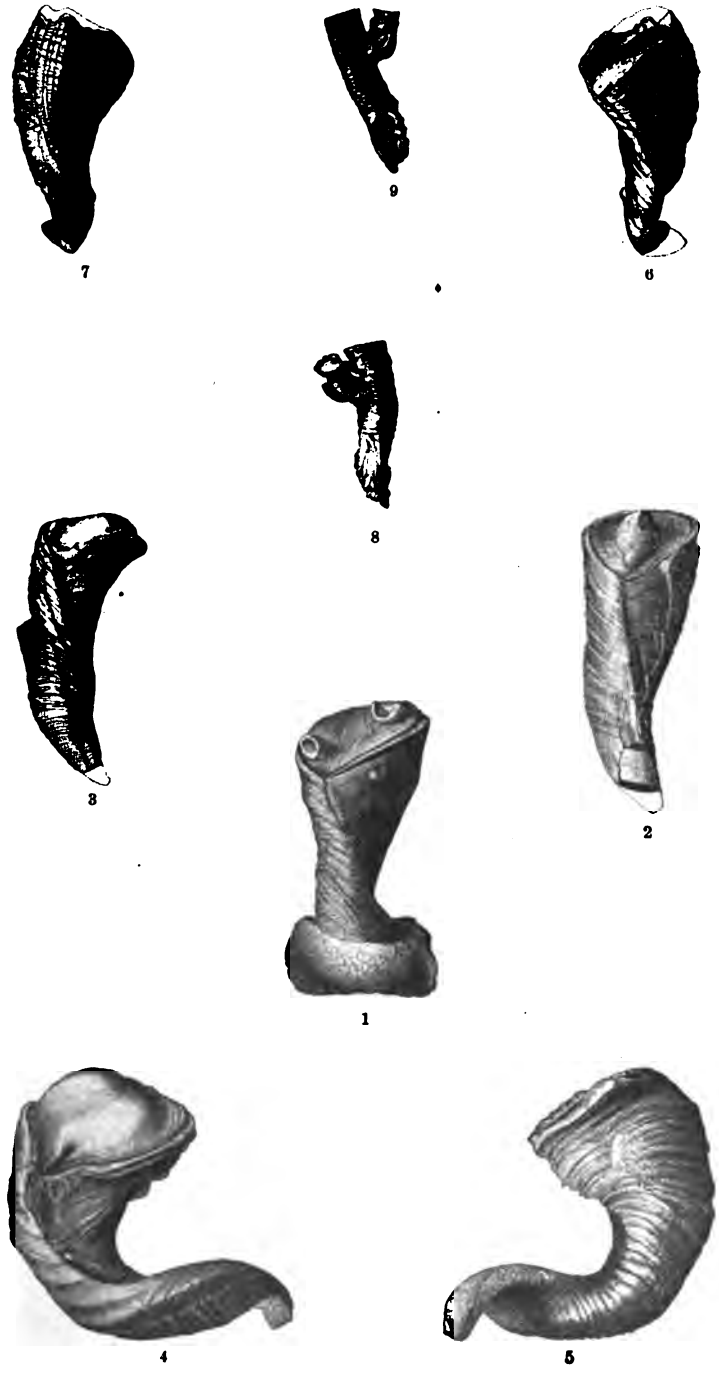
FIG. 2.—Lateral view of another example, the left valve bearing a young *Requienia*.

FIG. 3.—A similar view of another example, which also shows both valves.

FIGS. 4, 5.—Opposite views of a large distorted example; both valves together.

FIGS. 6, 7.—Opposite views of another example, also showing both valves.

FIGS. 8, 9.—Opposite views of a cluster of very young individuals attached to a corallite of *Cladophyllia*. All are of natural size. For other examples of this species see Plate III.

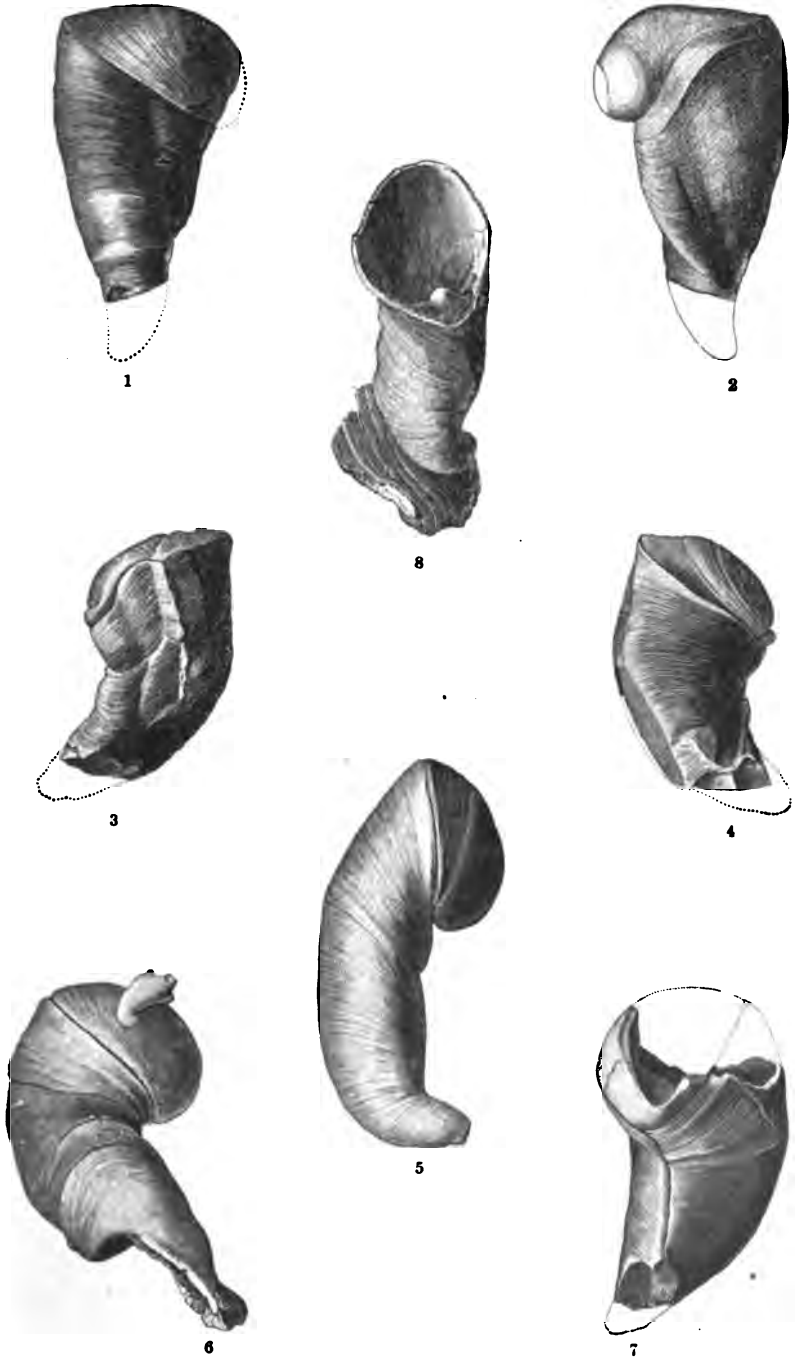


MONOPLEURA MARCIDA.

PLATE V.

MONOPLEURA PINGUISCULA. (Page 8.)

FIGS. 1, 2.—Opposite views of a large example, showing both valves.
FIGS. 3, 4.—Opposite views of a distorted example, showing both valves.
FIG. 5.—Another example; the right valve much elongated.
FIG. 6.—Another example; the right valve much distorted.
FIG. 7.—Another example, showing the hinge-plate of the broken left valve.
FIG. 8.—A right valve, showing the hinge. All natural size.



MONOPLEURA PINGUISCULA.

PLATE VI.

CYPRINA? DALLII. (Page 14.)

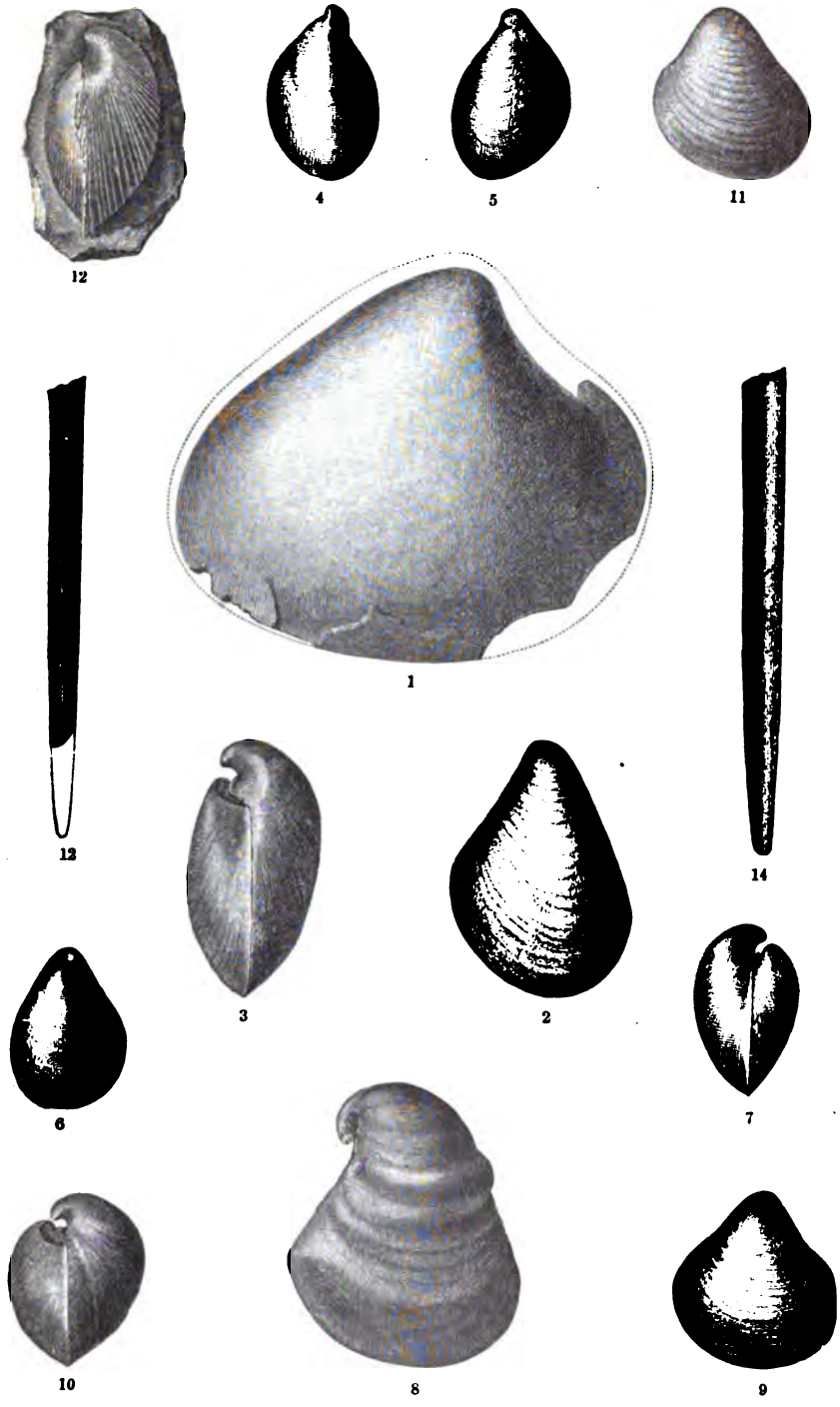
FIG. 1.—Lateral view of a natural cast of the interior of a right valve.

AUCELLA CONCENTRICA var. (Page 13.)

FIGS. 2, 3.—Two views of an internal cast of an adult example of normal shape.
FIGS. 4, 5.—Two views of another example, of smaller size.
FIGS. 6, 7.—Two views of still another similar example.
FIG. 8.—View of a left valve of one of the largest examples.
FIGS. 9, 10.—Two views of an unusually short and inflated example.
FIG. 11.—The left valve of another short example.
FIG. 12.—View of a gutta-percha cast from a natural mold of part of a shell, showing the concentric lamellations of the test. All of natural size.

BELEMNITES MACRITATIS. (Page 14.)

FIG. 13.—A fragment, showing the terminal portion of the phragmocone.
FIG. 14.—View of a gutta-percha cast of a natural mold. All of natural size.

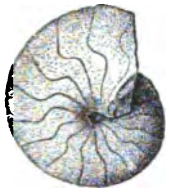


CYPRINA? DALLII, AUCELLA CONCENTRICA var., AND BELEMNITES MACRITATIS.

PLATE VII.

ENCLIMATOCERAS ULRICHI. (Page 17.)

FIG. 1.—Lateral view of the type specimen, four-fifths natural size.
FIGS 2, 3.—Two views of a fragment, showing the inner volutions. For other figures see Plates VIII and IX.



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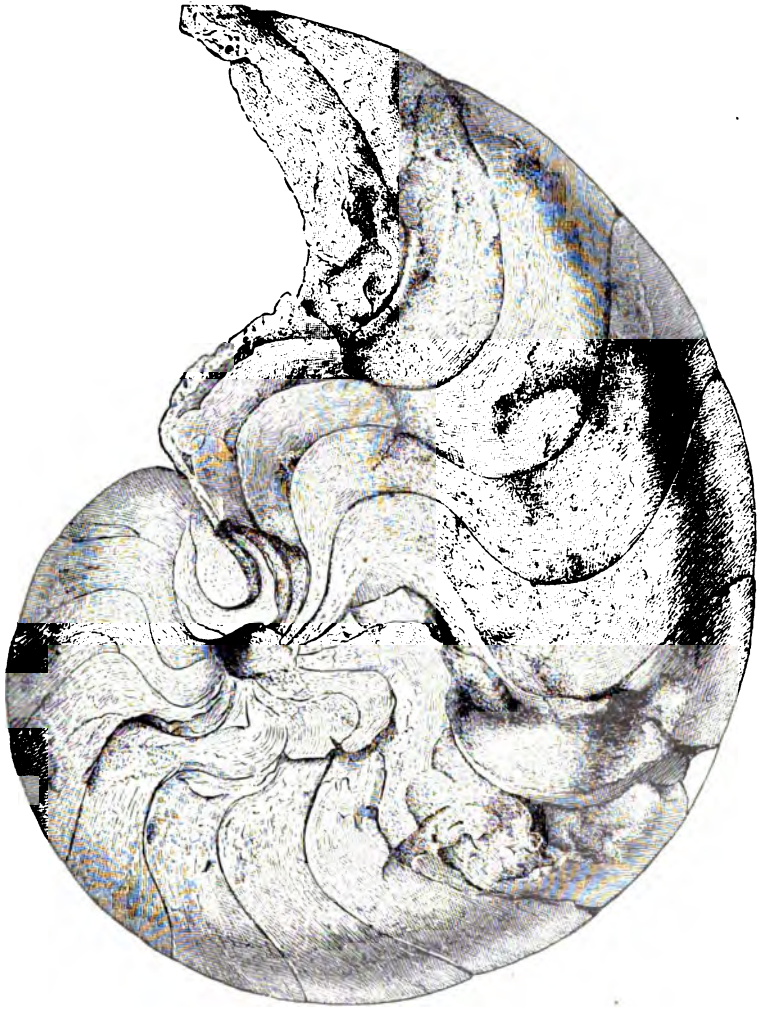

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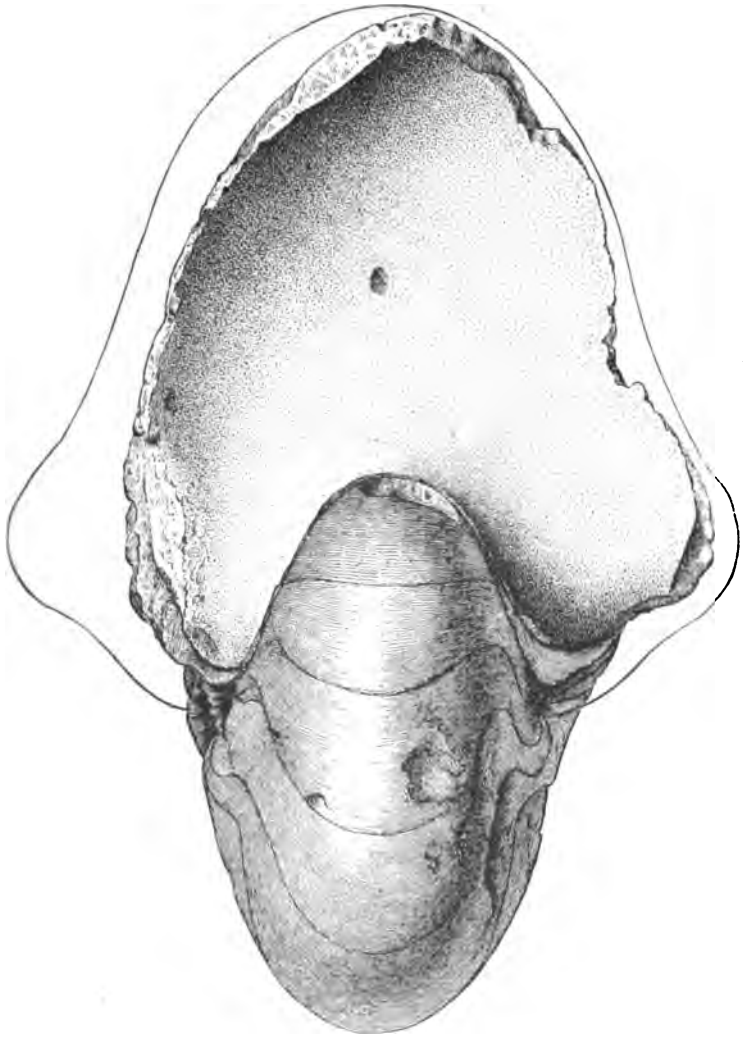
ENCLIMATOCERAS ULRICHI.

PLATE VIII.

ENCLIMATOCERAS ULRICHI. (Page 17.)

Front view of the type specimen, four-fifths natural size. For other figures see Plates VII and IX.

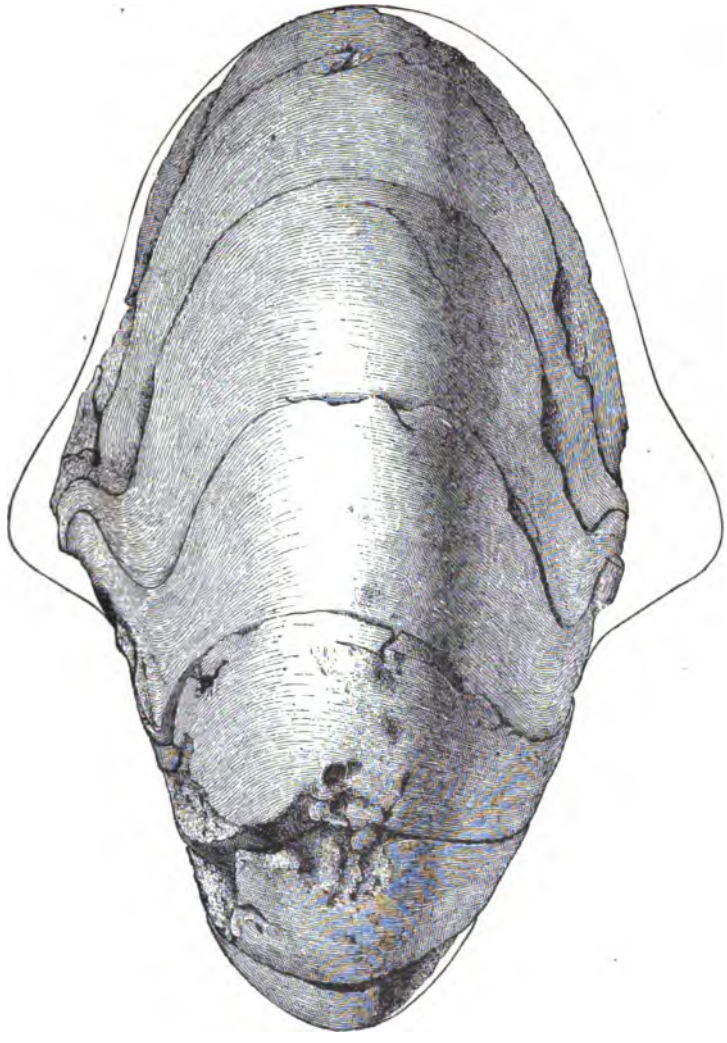


ENCLIMATOCERAS ULRICHI.

PLATE IX.

ENCLIMATOCERAS ULRICHI. (Page 17.)

Peripheral view of the type specimen, four-fifths natural size. For other figures see Plates VII and VIII.



ENCLIMATOCERAS ULRICHI.

ADVERTISEMENT.

(Bulletin 5)

The publications of the United States Geological Survey are issued in accordance with the statute, approved March 3, 1879, which declares that—

"The publications of the Geological Survey shall consist of the annual report of operations, geological and economic maps illustrating the resources and classifications of the lands, and reports upon general and economic geology and paleontology. The annual report of operations of the Geological Survey shall accompany the annual report of the Secretary of the Interior. All special memoirs and reports of said Survey shall be issued in uniform quarto series if deemed necessary by the Director, but otherwise in ordinary octavos. Three thousand copies of each shall be published for scientific exchanges and for sale at the price of publication; and all literary and cartographic materials received in exchange shall be the property of the United States and form a part of the library of the organization. And the money resulting from the sale of such publications shall be covered into the Treasury of the United States."

ANNUAL REPORTS.

From the above it will be seen that only the Annual Reports, which form parts of the reports of the Secretary of the Interior and are printed as executive documents, are available for gratuitous distribution. A number of these are furnished the Survey for its exchange list, but the bulk of them are supplied directly, through the document rooms of Congress, to members of the Senate and House. Except, therefore, in those cases in which an extra number is supplied to this office by special resolution, application must be made to members of Congress for the Annual Reports, as for all other executive documents.

Of these Annuals there have been already published:

I. First Annual Report to the Hon. Carl Schurz, by Clarence King. 1880. 8°. 79 pp. 1 map.—A preliminary report describing plan of organization and publications.

II. Report of the Director of the United States Geological Survey for 1880–'81, by J. W. Powell. 1882. 8° lv, 588 pp. 61 pl. 1 map.

III. Third Annual Report of the United States Geological Survey, 1881–'82, by J. W. Powell. 1883. 8°. xviii, 564 pp. 67 pl. and maps.

IV. Fourth Annual Report of the United States Geological Survey, 1882–'83, by J. W. Powell. 1884. 8°. xii, 473 pp. 85 pl. and maps.

No copies of the Fourth Annual have as yet been ordered by Congress for distribution by the Geological Survey.

MONOGRAPHS.

The Monographs of the Survey are printed for the Survey alone, and can be distributed by it only through a fair exchange for books needed in its library, or through the sale of those copies over and above the number needed for such exchange. They are not for gratuitous distribution.

So far as already determined upon, the list of these Monographs is as follows:

I. The Precious Metals, by Clarence King. In preparation.

II. Tertiary History of the Grand Cañon District, with atlas, by Capt. C. E. Dutton. Published.

III. Geology of the Comstock Lode and Washoe District, with atlas, by George F. Becker. Published.

IV. Comstock Mining and Miners, by Eliot Lord. In press.

V. Copper-bearing Rocks of Lake Superior, by Prof R. D. Irving. In press.

VI. Older Mesozoic Flora of Virginia, by Prof. William M. Fontaine In press.

VII. Silver-lead Deposits of Eureka, Nevada, by Joseph S. Curtis. In press.

VIII. Paleontology of the Eureka District, Nevada, by Charles D. Walcott. In press.

Geology and Mining Industry of Leadville, with atlas, by S. F. Emmons. In preparation.

Geology of the Eureka Mining District, Nevada, with atlas, by Arnold Hague. In preparation.

Coal of the United States, by Prof. R. Pumpelly. In preparation.

Iron in the United States, by Prof. R. Pumpelly. In preparation.

Lesser Metals and General Mining Resources, by Prof. R. Pumpelly. In preparation.

Lake Bonneville, by G. K. Gilbert. In preparation.

Dinocerata. A monograph on an extinct order of Ungulates, by Prof. O. C. Marsh. In press.

Sauropoda, by Prof. O. C. Marsh. In preparation.

Stegosauria, by Prof. O. C. Marsh. In preparation.

Of these Monographs, Nos. II, III, and IV are now published, viz:

ADVERTISEMENT.

II. Tertiary History of the Grand Cañon District, with atlas, by C. E. Dutton, Capt. U. S. A. 1882 4°. 264 pp., 42 pl. and atlas of 26 double sheets folio. Price $10.12.

III. Geology of the Comstock Lode and Washoe District, with atlas, by George F. Becker. 1882. 4°. 422 pp. 7 pl. and atlas of 21 sheets folio. Price $11.

IV. Comstock Mining and Miners, by Eliot Lord. 1883. 4°. 451 pp: 3 pl. Price $1.50.

Nos. V, VI, VII, and VIII are in press and will appear in quick succession. The others, to which numbers are not assigned, are in preparation.

BULLETINS.

The Bulletins of the Survey will contain such papers relating to the general purpose of its work as do not properly come under the heads of ANNUAL REPORTS or MONOGRAPHS.

Each of these Bulletins will contain but one paper and be complete in itself. They will, however, be numbered in a continuous series, and will in time be united into volumes of convenient size. To facilitate this each Bulletin will have two paginations, one proper to itself and another which belongs to it as part of the volume.

Of this series of Bulletins, Nos. 1, 2, 3, 4, and 5 are already published, viz:

1. On Hypersthene-Andesite and on Triclinic Pyroxene in Augitic Rocks, by Whitman Cross, with a Geological Sketch of Buffalo Peaks, Colorado, by S. F. Emmons. 1883. 8°. 42 pp. 2 pl. Price 10 cents.
2. Gold and Silver Conversion Tables, giving the coining value of Troy ounces of fine metal, &c., by Albert Williams, jr. 1883. 8°. 8 pp. Price 5 cents.
3. On the Fossil Faunas of the Upper Devonian, along the meridian of 76° 30′, from Tompkins County, New York, to Bradford County, Pennsylvania, by Henry S. Williams. 1884. 8°. 31 pp. Price 5 cents.
4. On Mesozoic Fossils, by Charles A. White. 1884. 8°. 36 pp. 9 pl. Price 5 cents.
5. A Dictionary of Altitudes in the United States, by Henry Gannett. 1884. 8°. 325 pp. Price 20 cents.

Nos. 6 and 7 are in press.

STATISTICAL PAPERS.

A fourth series of publications having special reference to the mineral resources of the United States is contemplated. Of that series the first has been published, viz: Mineral Resources of the United States, by Albert Williams, jr. 1883. 8°. xvii, 813 pp. Price 50 cents.

Correspondence relating to the publications of the Survey, and all remittances—which must be by postal note or money order—should be addressed to the

DIRECTOR OF THE UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C.

WASHINGTON, D. C., *June* 20, 1884.

DEPARTMENT OF THE INTERIOR

BULLETIN

OF THE

UNITED STATES

GEOLOGICAL SURVEY

No. 5

WASHINGTON
GOVERNMENT PRINTING OFFICE
1884

UNITED STATES GEOLOGICAL SURVEY
J. W. POWELL DIRECTOR

A DICTIONARY OF ALTITUDES IN THE UNITED STATES

COMPILED BY

HENRY GANNETT
CHIEF GEOGRAPHER

WASHINGTON
GOVERNMENT PRINTING OFFICE
1884

LETTER OF TRANSMITAL.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., November 1, 1883.

SIR: I have the honor to transmit herewith the manuscript of a Dictionary of Altitudes. The work of making a compilation of measurements of altitude was commenced by me under the auspices of the Geological Survey of the Territories, by which organization three different editions of the results were published, under the title of "Lists of Elevations," in the years 1873, 1875, and 1877, respectively. These earlier editions related principally to that portion of the country west of the Mississippi River. The present work embraces within its scope the whole country. The elevations are tabulated by States and Territories, alphabetic arrangement being observed throughout.

Very respectfully, yours,

HENRY GANNETT,
Chief Geographer.

Hon. J. W. POWELL,
Director United States Geological Survey.

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DISCUSSION OF AUTHORITIES.

ADIRONDACK SURVEY (ADIR. SURVEY), OF NEW YORK.

Most of these determinations are barometric. Some, however, have been determined by trigonometric methods and some by level.

APPALACHIAN CLUB (APPAL. CLUB).

Most of the determinations credited to this source are barometric, or at least depend upon barometric bases.

CITY ENGINEER.

These figures are the results of levelings courteously furnished me by the city engineers of the principal railway centers of the country.

DALL, WM. H., ASST. U. S. C. AND G. S.

Heights derived from this source were determined by angles measured with the sextant, from a base line measured by means of sextant latitudes and chronometric longitudes, from observations taken on board ship. (*Vide* Coast Survey Report for 1875.)

DE LACY, W. W.

All heights were measured by aneroid.

EASTMAN.

These results are from barometric work and from observations upon the boiling point of water.

EMORY, W. H.

Barometric determinations abstracted from a "Report of Explorations from Fort Leavenworth to San Diego," 1846. [30th Congress, 1st session, Senate Document.]

FOSTER AND WHITNEY.

Barometric determinations from the report on Lake Superior mining region.

FRÉMONT, CAPT. J. C.

Barometric determinations from reports of various expeditions in the West. Owing to the want of a barometric base, they are, in general, of poor quality.

GARDINER, J. T.

The heights credited to this authority were deduced from railroad levels, and were published in the report of the United States Geological Survey of the Territories for the year 1873.

GEOLOGICAL SURVEY OF MAINE.

Most of these results are barometric.

GEOLOGICAL SURVEY OF NEW HAMPSHIRE.

Elevations of towns credited to this source are, in the main, from levels; those of mountain summits are from barometric work.

GEOLOGICAL SURVEY OF NEW YORK.

Elevations were determined barometrically.

GEOLOGICAL SURVEY OF VERMONT.

All elevations under this authority are from barometric determinations.

GODDARD.

Determinations by level from preliminary railroad surveys made by the Central Pacific R. R. Co., of California. Like all preliminary work, these figures are not in the highest degree reliable.

GUYOT, PROF. ARNOLD.

Nearly all the elevations given under this authority are in the Appalachian region, and nearly all were determined by barometer. They are of the highest character of this class of work. Most of the figures are copied from Professor Guyot's articles in the "American Journal of Science and Arts."

HAYDEN, DR. F. V.

Under this authority is given all work done by the United States Geological Survey of the Territories. All determinations are barometric, or trigonometric resting on barometric bases. In most of this work effective measures were taken to avoid the well-known periodic errors incident to barometric work. The base-stations were placed, as nearly as possible, at the average height of the country to be surveyed. The high peaks were connected by a system of trigonometric leveling, by means of which, barometric observations, taken on different summits, were reduced to a common point. The mean results thus obtained were referred to base-stations located upon high mountain peaks.

HIND, PROF. H. Y.

Assinaboine and Saskatchewan Exploring Expedition, 1858.
Heights were measured by barometer.

IVES.

Report of Colorado Exploring Expedition [Thirty-sixth Congress, first session, Senate Document].
All determinations are barometric.

JENNEY, PROF. WILLIAM P.

Heights were abstracted from the map of the Black Hills.
All determinations are barometric.

JONES, CAPT. W. A.

Report of Expedition to Northwestern Wyoming and the Yellowstone Park, 1873.
All determinations are barometric.

KING, CLARENCE.

This reference is mainly to the work of the Geological Exploration of the 40th Parallel.
All determinations are barometric, or depend upon barometric bases.

LANDER.

Heights are taken from "Report on a Railroad Route from Puget Sound to South Pass," 1854. [House Document 129.]
Elevations were determined barometrically.

LAND-OFFICE REPORTS. (L. O. REPORTS.)

Most of the heights given in these reports are the merest approximations.

LA PEROUSE.

"Voyage to the Northwestern Coast of America," 1786.
Heights were determined by trigonometric measurements from sea bases.

LUDLOW, CAPT. WILLIAM.

Under this authority are given elevations determined by his "Expedition to the Black Hills of Dakota," 1874, and his "Expedition to the Head of the Yellowstone and the Judith Basin," 1875.
Heights were measured by the barometer.

MALESPINA.

"Voyage to the Northwestern Coast of America."
Heights were measured trigonometrically from bases at sea.

MEDICAL DEPARTMENT, UNITED STATES ARMY (MED. DEPT. U. S. A).

Nearly all heights given under this authority were determined barometrically.

MEXICAN BOUNDARY SURVEY.

Elevations were determined barometrically.

MULLAN, CAPT. JOHN.

"Explorations for a Wagon Road from Walla Walla to Fort Benton," 1862.
All heights were determined barometrically.

NEW YORK STATE SURVEY.

These results are from refined trigonometric work.

NICOLAY.

"Explorations in the Upper Mississippi Region," 1836 to 1840.
All determinations were barometric.

PACIFIC RAILROAD REPORTS (P. R. R. REPORTS).

Under this authority is included all work done by the War Department, between 1850 and 1855, for the purpose of finding a practicable railroad route from the Missouri River to the Pacific.

All the work is barometric, and, taken as a whole, is poor, owing mainly to the fact that, practically, there was no barometric base station. The hypsometric work of the expedition near the northern boundary, under Governor Stevens, was particularly bad. These remarks concerning the quality of the work apply equally well to all the earlier expeditions to the West, owing, doubtless, to the same cause.

PARRY, PROF. C. C.

Elevations were barometrically determined.

PETERMANN, DR. A.

Elevations were taken from his map of the United States.

POWELL, MAJ. J. W.

To this authority is credited the hypsometric work of the United States Geological and Geographical Survey of the Rocky Mountain Region.

PRELIMINARY RAILROAD LEVELS (PRE. R. R. LEVELS).

These are distinguished from other railroad levels, because, as a rule, the preliminary levels are of a far less degree of accuracy; the results can therefore be accepted only with caution.

RAILROADS.

Elevations determined by railroad levels are credited to the roads by which they were furnished. On page — *et seq.* will be found a list of these railroads, with the abbreviations used for them, arranged alphabetically in the order of the abbreviations. The height given is that of the track at the station. In cases where two or more railroads meet or cross at the same point on the same grade, the elevation by only one of them, and that the best known or best determined road, is given. The collection and adjustment of these levels has formed by far the greater part of the work of this compilation.

The profiles of most of the roads west of the Mississippi were col-

lected and published in "Lists of Elevations," 4th edition, in 1877. Since that time, circumstances have conspired to assist me greatly in the collection of this material in all parts of the country. In 1880, while I was connected with the Census Office, the late Chief Signal Officer, General A. J. Myer, courteously placed at the disposal of that office copies of all the material of this kind which had been collected by the Signal Office. Further, in the railroad schedule of census was inserted a request for an abstract of the profile of each road. This request was acceded to in all cases when possible, and through this means a great number of profiles from the most recent levels were received. Through the courtesy of the Census Office I have been permitted to use them in the present publication. Moreover, I have received within the past year profiles of a number of the most important roads in the country, which close up gaps in connections, and establish strong connecting links in chains of levels. In addition to the above, there were in print, principally in the reports of State geological surveys, a large number of profiles. Those of New Hampshire have been adjusted admirably and published in the report of the State Geological Survey. The same is the case with the large and complex system of Pennsylvania. The collection of profiles of this is exceptionally complete and admirably adjusted, and renders the portion of the Dictionary relating to this State by far the fullest and most satisfactory. The Geological Survey of New Jersey has published profiles of many of the roads of that State. The profiles of most of the roads of Virginia and West Virginia have been published by Maj. Jed. Hotchkiss, in his "Summary of Virginia" and the "Virginias." Profiles of most of the North Carolina roads have been published in the report of the State Geological Survey by Prof. W. C. Kerr; many of those of Alabama in the reports of Prof. E. A. Smith; of Ohio, in the State Geological Survey reports; of Indiana, in the reports of the Bureau of Statistics and Geology; of Wisconsin, Minnesota, and Iowa, in the reports of the geological surveys of those States. In this connection I desire to express my obligations to Prof. Warren Upham, of the geological and natural history survey of Minnesota, for his kind co-operation in the collection and adjustment of the railroad material in his State.

Much interest in this work has been manifested by railroad engineers, many of whom have contributed liberally of their time for the correction and proper connection of the profiles of their roads or systems of roads. Among them I should mention Mr. H. V. Hinckley, assistant engineer A., T. and S. F. R. R., who has, at great expenditure of time and labor, prepared a correct profile of his road, with its numerous branches; Mr. George H. Nettleton, president of the system of roads in southeastern Kansas; S. S. Montague, chief engineer of the Central Pacific system; and Mr. George Nealley, formerly assistant engineer on the Union Pacific Railroad, to whom I am indebted, in addition to other favors, for a correct profile of the Union Pacific Railroad.

While a great degree of success has attended my efforts for obtaining railroad profiles, there are still remaining a large number of roads, some of them of great importance, which have thus far failed to respond, owing in most cases to the fact that their records of levels have been destroyed.

The adjustment of these levels has been a most perplexing task. The errors in the compilation of the profiles themselves, and the uncertainties in the connections and crossings of different roads, together with the legitimate errors of leveling, conspire to make this work of adjustment one of the most difficult and unsatisfactory undertakings imaginable. I cannot claim that the result is by any means what could be desired, but I believe that, with the material and resources at hand, fairly good results have been obtained. The work of the United States Lake Survey in determining the heights of the Great Lakes, and of the Mississippi River Commission in determining the elevation of points along the Mississippi River, and of the transcontinental levels of the Coast and Geodetic Survey, have been accepted as starting-points.

The adjustment of the railroad levels of New Hampshire and of Pennsylvania has also been accepted, after subjecting it to tests for accuracy. The adjustment of railroad levels by Mr. James T. Gardiner, the results of which were published in the annual report of the United States Geological Survey of the Territories for 1873, was examined critically in the light of the determinations of heights made by the Coast and Lake Surveys, of the Mississippi River Commission, and the more recent and presumably more correct profiles received since the time of Mr. Gardiner's work. The changes in the heights of the Great Lakes amounting to 7 feet (lower) in the cases of Michigan, Huron, and Superior necessitated considerable changes in the States of Michigan, Wisconsin and Minnesota, and the Territory of Dakota. The levels of the Mississippi River Commission lowered Cairo 12 feet, and the Saint Louis Directrix 15 feet. These corrections were even more wide-spread in their results. They induced changes throughout the whole of that portion of the country west of the Mississippi River as far as the Rocky Mountains. Eastward their effect was felt as far as Indianapolis, Ind. and the Falls of the Ohio. Aside from these changes in Mr. Gardiner's adjustment, his work has borne the tests admirably, and the results with perhaps slight modification in certain cases, have been accepted and used for further adjustment.

It has been suggested that the method of least squares might be used to advantage in the adjustment of this material. This method does not seem to me to be at all applicable to the class of errors here encountered. These are, in the main, what may be classed as abnormal errors, due not to want of accuracy of observations, but to mistakes, blunders, and uncertainties, a class of errors from which the method of least squares would deduce only false results.

RAYNOLDS, CAPT. W. F.

Under this authority are given the hypsometric results of the expedition of Captain Raynolds to the country about the sources of the Snake and Missouri Rivers in 1860–'61.

All the work is barometric.

RUFFNER.

"Reconnaissance in the Ute Country," 1873.

All determinations are barometric.

SIMPSON, CAPT. J. H.

"Reconnaissance in Navajo Country," 1849 [Thirty-first Congress, first session, Senate Doc. 6.]; and "Explorations in the Great Basin of Utah," 1859, published in 1876.

All determinations are barometric.

SMITHSONIAN INSTITUTION.

Most, if not all, of these elevations have been determined by barometer.

STUART, GRANVILLE.

All determinations are barometric.

TONER, DR. J. M.

Under this authority are given all heights taken from his "Dictionary of Elevations."

UNITED STATES COAST AND GEODETIC SURVEY (U. S. C. AND G. S.).

Heights have been determined by the most refined geodetic methods.

UNITED STATES ENGINEER CORPS (U. S. ENGR. CORPS).

The figures given under this authority are the results of exact levels.

UNITED STATES GEOLOGICAL AND GEOGRAPHICAL SURVEY OF THE ROCKY MOUNTAIN REGION.

All, or practically all, heights were determined by barometer.

UNITED STATES LAKE SURVEY.

These results are from exact levels or refined trigonometric work.

UNITED STATES SIGNAL OFFICE.

The character of these determinations was misstated in "Lists of Elevations, 4th Edition," published in 1877. In nearly all cases these elevations were determined from railway levels and from levels from railway bench-marks. They were determined by barometer only in cases where exact methods could not be employed.

WALLEN.

"Explorations for a Wagon Road from the Dalles of the Columbia to Great Salt Lake, via Harney's Lake."

All determinations are barometric.

WATER-POWER OF MAINE.

Most of the heights were obtained by level.

WHEELER, CAPT. GEORGE M.

To this authority are credited all elevations determined by the United States Geographical Surveys West of the 100th Meridian.

Nearly all the work is barometric or trigonometric, depending upon barometric bases.

WHITNEY, PROF. J. D.

Under this authority are given elevations determined by the Geological Survey of the State of California, and the "Geological and Topographical Reconnaissance of the South Park, Colorado."

All heights are barometrically determined.

WILKES, CAPT. CHARLES.

"Voyage of Exploration to the Pacific."

WILLIAMSON.

Elevations are all barometrically determined.

ABBREVIATIONS OF NAMES OF RAILROADS, GIVEN AS AUTHORITIES.

Adir. R. R.....Adirondack Railroad.
A. C. R. R. .....Alabama Central Railroad.
A. & D. R. R.....Adrian and Detroit Railroad.
A. & F. B. V. R. R.....Atlantic and French Broad Valley Railroad.
Ala. G. S. R. R .....Alabama Great Southern Railroad.
A. & G. W. R. R.....Atlantic and Great Western Railroad.
A., G. & W. I. T. R. R..Atlantic, Gulf and West India Transit Railroad.
A. & L. R. R .....Albany and Lebanon Railroad.
A., M & O. R. R.....Atlantic, Mississippi and Ohio Railroad.
A. & N. R. R.....Atchison and Nebraska Railroad.
A. & N. C. R. R.....Atlantic and North Carolina Railroad.
A. & P. R. R.....Atlantic and Pacific Railroad.
Ash. & P. R. R.....Ashtabula and Pittsburgh Railroad.
A. & R. A. L. R. R.....Atlanta and Richmond Air Line Railroad.
A. & S. R. R.....Albany and Susquehanna Railroad.
A. & St. L. R. R.....Atlantic and St. Lawrence Railroad.
A., T. & S. F. R. R.....Atchison, Topeka and Santa Fé Railroad.
A. V. R. R.....Allegheny Valley Railroad.
A. & W. P. R. R.....Atlantic and West Point Railroad.
B. R. R.....Barclay Railroad.
B. & A. R. R.....Brunswick and Albany Railroad.
Boston & Albany R. R.Boston and Albany Railroad.
Bed. & Bridge. R. R...Bedford and Bridgeport Railroad.
Bost.,Con.& Mont. R.R.Boston, Concord and Montreal Railroad.
B., C. & P. R. R.....Buffalo, Corry and Pittsburgh Railroad.
B., C. R. & N. R. R.....Burlington, Cedar Rapids and Northern Railroad.
B. & E. R. R.....Belleville and Eldorado Railroad.
B. E. Valley R. R .....Bald Eagle Valley Railroad.
B. G. R. R.....Bell's Gap Railroad.
B. & H. R. R..... ....Baltimore and Hanover Railroad.
B. & M. R. R. R.....Burlington and Missouri River Railroad.
B. & N. R. R. .....Burlington and Northwestern Railroad.
Bost. & N. Y. R. R....Boston and New York Railroad.
B., N. Y. & P. R. R....Boston, New York and Philadelphia Railroad.
B. & O. R. R..... ....Baltimore and Ohio Railroad.
B. & P. R. R.....Baltimore and Potomac Railroad.
Bost. & Prov. R. R....Boston and Providence Railroad.
B., P. & C. R. R.....Baltimore, Pittsburgh and Chicago Railroad.
B. & S. R. R.....Burlington and Southwestern Railroad.
B. & S. Ill. R. R.....Belleville and Southern Illinois Railroad.
B. & S. S. R. R.... ....Bellefont and Snow Shoe Railroad.
B. & S. W. R. R.....Bellaire and South Western Railroad.
Buff. & S. W. R. R. ...Buffalo and South Western Railroad.
B. V. R. R.....Buffalo Valley Railroad.
Cent. R. R..... .....Central Railroad (Ga.).
Chat. R. R ....Chateaugay Railroad.

Camden & A. R. R.....Camden and Amboy Railroad.
C. & A. R. R. .....Chicago and Alton Railroad.
C. B. & Q. R. R.....Chicago, Burlington and Quincy Railroad.
C. C. R. R. .....Colorado Central Railroad.
Car. C. R. R.....Carolina Central Railroad.
Charlotte, C. & A. R. R.Charlotte, Columbia and Augusta Railroad.
Corning, C. & A. R. R .Corning, Cowanesque and Antrim Railroad.
C., C., C. & I. R. R....Cleveland, Columbus, Cincinnati and Indianapolis Railroad.
C. C. & De R. R. R....Cazenovia, Canastota and De Ruyter Railroad.
C. D. & C. G. T. J. R. R.Chicago, Detroit and Canada Grand Trunk Junction Railroad.
C. & E. Ill. R. R.....Chicago and Eastern Illinois Railroad.
C. & F. R. R.....Catasauqua and Fogelsville Railroad.
C. F. & M. R. R.....Cedar Falls and Minnesota Railroad.
C. & G. R. R.....Columbia and Greenville Railroad.
C. G. & S. L. R. R.....Cape Girardeau and State Line Railroad.
C. & G. T. R. R.....Chicago and Grand Trunk Railroad.
C. H. & D. R. R.....Cincinnati, Hamilton and Dayton Railroad.
C. & H. V. R. R.....Columbus and Hocking Valley Railroad.
Cent. Iowa R. R.....Central Iowa Railroad.
C. & I. R. R.... .....Chicago and Iowa Railroad.
C., I., St. L. & C. R. R .Cincinnati, Indianapolis, Saint Louis and Chicago Railroad.
C. & L. N. G. R. R.....Chester and Lenoir Narrow Guage Railroad.
C. & M. L. S. R. R....Chicago and Michigan Lake Shore Railroad.
C. M. & St. P. R. R....Chicago, Milwaukee and Saint Paul Railroad.
C., Mt. V. & D. R. R....Cleveland, Mount Vernon and Delaware Railroad.
C. N. R. R.....Cincinnati Northern Railroad.
C. & N. W. R. R.....Chicago and North Western Railroad.
C. N. O. & T. P. R. R....Cincinnati, New Orleans and Texas Pacific Railroad.
C. & O. R. R.....Chesapeake and Ohio Railroad.
Cal. P. R. R.....California Pacific Railroad.
C. P. R. R.....Central Pacific Railroad.
Cin. & P. R. R.....Cincinnati and Portsmouth Railroad.
Conn. & Pass. R. R.....Connecticut and Passumpsic Railroad.
Cleve. & P. R. R.....Cleveland and Pittsburgh Railroad.
C. & P. D. R. R.....Columbia and Port Deposit Railroad.
C. & R. R. R.....Columbus and Rome Railroad.
Conn. River R. R.....Connecticut River Railroad.
C. R. & Ft. W. R. R.....Cincinnati, Richmond and Fort Wayne Railroad.
C., R. I. & P. R. R.....Chicago, Rock Island and Pacific Railroad.
C. S. R. R.....Cincinnati Southern Railroad.
C. & S. R. R.....Cayuga and Susquehanna Railroad.
C. & St. L. R. R.....Cairo and Saint Louis Railroad.
C., St. P., M. & O. R. R.Chicago, Saint Paul, Minneapolis and Omaha Railroad.
C., T. V. & W. R. R ....Cleveland, Tuscarawas Valley and Wheeling Railroad.
C. & V. R. R.....Cairo and Vincennes Railroad.
Cent. Vt. R. R.....Central Vermont Railroad.
Conn. Western R. R....Connecticut Western Railroad.
C. & W. R. R.....Catawissa and Williamsport Railroad.
C., W. & M. R. R.....Cincinnati, Wabash and Michigan Railroad.
C. & Z. R. R.....Cincinnati and Zanesville Railroad.
D. R. R.....Delaware Railroad.
D., A. V. & P. R. R.....Dunkirk, Allegheny Valley and Pittsburgh Railroad.
D. & B. C. R. R.....Detroit and Bay City Railroad.
D. & B. V. R. R.....Denver and Boulder Valley Railroad.
D. & D. R. R.....Dorchester and Delaware Railroad.

D., G., H. & M. R. R...Detroit, Grand Haven and Milwaukee Railroad.
D., H. & W. R. R.....Danville, Hazelton and Western Railroad.
D., L. & N. R. R .....Detroit, Lansing and Northern Railroad.
Del., L. & W. R. R .....Delaware, Lackawanna and Western Railroad.
D. M. & Ft. D. R. R.....Des Moines and Fort Dodge Railroad.
D., M. & M. R.R .....Detroit, Mackinac and Marquette Railroad.
D. M. & N. W. R. R.....Des Moines and North Western Railroad.
D. P. R. R. .....Denver Pacific Railroad.
D. & R. Canal.....Delaware and Raritan Canal.
D. & R. G. R. R .....Denver and Rio Grande Railroad.
D. R. V. R. R.....Duck River Valley Railroad.
D. & S. E. R. R .....Dayton and South Eastern Railroad.
D. & S. P. R. R.....Denver and South Park Railroad.
D. & St. P. R. R.....Davenport and Saint Paul Railroad.
D. & S. W. R. R .....Danville and South Western Railroad.
E. A. L. R. R .....Elberton Air Line Railroad.
E. Broadtop R. R.....East Broadtop Railroad.
E. B. & W. R. R.....East Brandywine and Waynesburg Railroad.
E. & C. R. R .....Ebensburg and Cresson Railroad.
E., H. & N. R. R.....Evansville, Henderson and Nashville Railroad.
E. L., & B. S. R. R.....Elizabethtown, Lexington and Big Sandy Railroad.
E. L. & R. R. R. R.....East Line and Red River Railroad.
E. M. R. R .....East Mahanoy Railroad.
European & N. A. R. R.European and North American Railroad.
E. Pa. R. R .....East Pennsylvania Railroad.
E. & P. R. R .....Erie and Pittsburgh Railroad.
Eureka & P. R. R.....Eureka and Palisade Railroad.
Eel R. R. R.....Eel River Railroad.
E. S. R. R.....Eastern Shore Railroad.
E. & T. H. R. R .....Evansville and Terre Haute Railroad.
E., T. H. & C. R. R .....Evansville, Terre Haute and Chicago Railroad.
E. T., V. & G. R. R.....East Tennessee, Virginia and Georgia Railroad.
Ft. D. & Ft. R. R. R ....Fort Dodge and Fort Ridgeley Railroad.
F., J. & G. R. R .....Fonda, Johnstown and Gloversville Railroad.
F. & N. Y. R. R.....Freehold and New York Railroad.
F., O. & C. R. R.....Fredericksburg, Orange and Charlottesville Railroad.
Ft. M. & N. W. R. R....Fort Madison and North Western Railroad.
Ft. S., S. E. & M. R. R ..Fort Scott, South Eastern and Memphis Railroad.
Ft. W., J. & S. R. R ....Fort Wayne, Jackson and Saginaw Railroad.
Ga. R. R .....Georgia Railroad.
G. B. R. R .....Green Bay Railroad.
G., B. & C. R. R.....Golden, Boulder and Caribou Railroad.
G. B. & Minn. R. R .....Green Bay and Minnesota Railroad.
G., C. & S. F. R. R.....Gulf, Colorado and Santa Fé Railroad.
G., H. & S. A. R. R .....Galveston, Harrisburg and San Antonio Railroad.
G., I. & S. R. R .....Geneva, Ithaca and Sayre Railroad.
G., L. & S. J. R. R.....Georgetown, Leadville and San Juan Railroad.
G. R. & Ind. R. R .....Grand Rapids and Indiana Railroad.
G. R. V. R. R .....Grand River Valley Railroad.
G. & S. P. R. R.....Golden and South Platte Railroad.
G., W. T. & P. R. R ...Gulf, Western Texas and Pacific Railroad.
H. & B. T. R. R .....Huntington and Broad Top Railroad.
H. & C. M. R. R.....Hannibal and Central Missouri Railroad.
H. & N. R. R.....Hannibal and Naples Railroad.
H., P. & F. R. R.....Hartford, Providence and Fishkill Railroad.

H. & St. J. R. R .....Hannibal and Saint Joseph Railroad.
H. & T. C. R. R.....Houston and Texas Central Railroad.
I., B. & W. R. R.....Indiana, Bloomington and Western Railroad.
Ill. Cent. R. R .....Illinois Central Railroad.
I., D. & S. R. R.....Indianapolis, Decatur and Springfield Railroad.
I. & G. N. R. R .....International and Great Northern Railroad.
Inds. & La F. R. R ....Indianapolis and La Fayette Railroad.
Ill. & St. L. R. R .....Illinois and Saint Louis Railroad.
Inds. & V. R. R.....Indianapolis and Vincennes Railroad.
J. & B. R. R .....Junction and Breakwater Railroad.
J. C. & Ft. K. R. R.....Junction City and Fort Kearney Railroad.
J., L. & S. R. R.....Jackson, Lansing and Saginaw Railroad.
J., M. & I. R. R.....Jeffersonville, Madison and Indianapolis Railroad.
J. & N. Ind. R. R .....Joliet and Northern Indiana Railroad.
J. R. & K. Canal.....James River and Kanawha Canal.
J. S. E. R. R.....Jacksonville South Eastern Railroad.
J. S., P. C. & B. R. R....Jersey Shore, Pine Creek and Buffalo Railroad.
K. C. R. R.....Kansas Central Railroad.
K. C., Ft. S. & G. R. R ..Kansas City, Fort Scott and Gulf Railroad.
K. C., L. & S. R. R ....Kansas City, Lawrence and Southern Railroad.
K. C., St. J. & C. B. R. R.Kansas City, Saint Joseph and Council Bluffs Railroad.
K. & N. W. R. R.....Keokuk and North Western Railroad.
K. P. R. R.....Kansas Pacific Railroad.
K. & S. H. R. R.....Kalamazoo and South Haven Railroad.
K. U. R. R.....Kentucky Union Railroad.
L. R. R.....Lackawanna Railroad.
L. & A. R. R.....Lowell and Andover Railroad.
L. A. & I. R. R.....Los Angeles and Independent Railroad.
L. B. R. R.....Lawrenceville Branch Railroad.
L., C. & L. R. R.....Louisville, Cincinnati and Lexington Railroad.
L. C. & S. C. R. R.....Lewisburg Center and Spruce Creek Railroad.
L. E. & W. R. R.....Lake Erie and Western Railroad.
L. & L. R. R.....Lehigh and Lackawanna Railroad.
L. & M. R. R. R.....Louisville and Missouri River Railroad.
L., N. A. & C. R. R....Louisville, New Albany and Chicago Railroad.
L., N., S. & N. A. R. R.Louisville, Nashville, South and North Alabama Railroad.
L. & Q. R. R.....Lancaster and Quarryville Railroad.
L. R. & Ft. S. R. R....Little Rock and Fort Smith Railroad.
L. R. V. & Ark. R. R....Little River Valley and Arkansas Railroad.
L. & S. R. R.....Lehigh and Susquehanna Railroad.
L. Schuyl. R. R.....Little Schuylkill Railroad.
L. S. & M. R. R. R.....Lake Superior and Mississippi River Railroad.
L. S. & M. S. R. R .....Lake Shore and Michigan Southern Railroad.
L. & S. V. R. R.....Longview and Sabine Valley Railroad.
L. & S. W. R. R.....Lawrence and South Western Railroad.
L. & T. R. R.....Lebanon and Tremont Railroad.
M. R. R.....Montrose Railroad.
Mt. A. R. R.....Mont Alto Railroad.
M. & A. G. T. R. R.....Mobile and Alabama Grand Trunk Railroad.
M. & B. R. R..... ....Macon and Brunswick Railroad.
Me. Cent. R. R.....Maine Central Railroad.
Mass. Cent. R. R.....Massachusetts Central Railroad.
Mich. A. L. R. R.....Michigan Air Line Railroad.
Mich. Cent. R. R.....Michigan Central Railroad.
Mill C. R. R.....Mill Creek Railroad.

Muncy C. R. R.....Muncy Creek Railroad.
Memphis & C. R. R....Memphis and Charleston Railroad.
M. & C. R. R.....Marietta and Cincinnati Railroad.
M. & C. Co. R. R.....Mifflin and Center County Railroad.
M. C. & S. B. R. R.....Mauch Chunk and Switch Back Railroad.
M. C. & T. R. R.....Mississippi Central and Tennessee Railroad.
M. & D. R. R.....Mechanicsburg and Dillsburg Railroad.
M. & E. R. R.....Montgomery and Eufaula Railroad.
M. & G. R. R.....Millville and Glassboro' Railroad.
M., H. & O. R. R.....Marquette, Houghton and Ontonagon Railroad.
M. H. & S. H. R. R....Mine Hill and Schuylkill Haven Railroad.
M. & I. Canal.....Michigan and Illinois Canal.
Mo., Iowa & Neb. R. R. Missouri, Iowa and Nebraska Railroad.
McK. & B. R. R.....McKean and Buffalo Railroad.
M., K. & C. R. R.....Memphis, Kansas and Colorado Railroad.
Mo., Kans. & Tex. R. R. Missouri, Kansas and Texas Railroad.
M., K. & T. E. R. R...Missouri, Kansas and Texas Extension Railroad.
Man. & Lawrence R. R..Manchester and Lawrence Railroad.
M. & L. R. R. R.....Memphis and Little Rock Railroad.
M., L. S. & W. R. R....Milwaukee, Lake Shore and Western Railroad.
Morgan's L. & T. R. R. Morgan's Louisiana and Texas Railroad.
Minn. Mid. R. R.....Minnesota Midland Railroad.
M. & M. R. R.....Mobile and Montgomery Railroad.
Mil. & N. R. R. R....Milwaukee and Northern Railroad.
M. & N. G. R. R.....Marietta and North Georgia Railroad.
Man. & N. Weare R. R..Manchester and North Weare Railroad.
M. & N. W. R. R.....Mobile and North Western Railroad.
M. & O. R. R.....Mobile and Ohio Railroad.
M. & P. R. R.....Marietta and Pittsburgh Railroad.
M. R. R. R.....Mineral Range Railroad.
M. & S. R. R.....Mahanoy and Shamokin Railroad.
M. & St. L. R. R.....Minneapolis and Saint Louis Railroad.
M. & W. R. R.....Macon and Western Railroad.
M. & W. R. R. R.....Montpelier and Wells River Railroad.
N. Carolina R. R.....North Carolina Railroad.
N. C. R. R.....Northern Central Railroad.
N. C. & B. V. R. R.....New Castle and Beaver Valley Railroad.
N. C. & F. R. R.....New Castle and Franklin Railroad.
Nev. Co. N. G. R. R.....Nevada County Narrow Guage Railroad.
N. D. & C. R. R.....Newburgh, Dutchess and Connecticut Railroad.
N. E. R. R.....North Eastern Railroad.
N. E. Pa. R. R.....North East Pennsylvania Railroad.
N. H. & Northam. R. R. New Haven and Northampton Railroad.
N. J. C. R. R.....New Jersey Central Railroad.
N. M. & S. P. R. R.....New Mexico and Southern Pacific Railroad.
N. & N. R. R.....Nashville and Northwestern Railroad.
N. O. M. & T. R. R.....New Orleans, Mobile and Texas Railroad.
N. O. & N. E. R. R.....New Orleans and North Eastern Railroad.
N. P. R. R.....Northern Pacific Railroad.
N. Pa. R. R.....North Pennsylvania Railroad.
N. Valley R. R.....Nesquehoning Valley Railroad.
N. & W. R. R.....Norfolk and Western Railroad.
N. W. N. C. R. R.....North Western North Carolina Railroad.
N. W. U. R. R.....North Western Union Railroad.
N. Y., B. & M. R. R.....New York, Boston and Montreal Railroad.

N. Y. C. & H. R. R. R ...New York Central and Hudson River Railroad.
N. Y. C. & N. R. R.....New York City and Northern Railroad.
N. Y. & H. R. R .....New York and Harlem Railroad.
N. Y., K. & S. R. R .....New York, Kingston and Syracuse Railroad.
N. Y., L. E. & W. R. R ..New York, Lake Erie and Western Railroad.
N. Y. & N. H. R. R.....New York and New Haven Railroad.
N.Y., N. H.& Htfd. R.R.New York, New Haven and Hartford Railroad.
N. Y. & O. M. R. R.....New York and Oswego Midland Railroad.
N.Y., Prov.& Bost. R.R.New York, Providence and Boston Railroad.
N. Y., Pa. & O. R. R ....New York, Pennsylvania and Ohio Railroad.
N. Y., R. & P. R. R.....New York, Ridgeway and Petersburg Railroad
O. & E. Canal .....Ohio and Erie Canal.
O. & M. R. R... .....Ohio and Mississippi Railroad.
O., N. & B. H. R. R .....Omaha, Niobrara and Black Hills Railroad
O. & R. V. R. R.....Omaha and Republican Valley Railroad.
Oreg. R. R. & Nav. Co ..Oregon Railroad and Navigation Company.
O. & R. R. R .....Oswego and Rome Railroad.
Oregon & Cal. R. R ....Oregon and California Railroad.
O. & S. R. R .....Oswego and Syracuse Railroad.
P. R. R .....Perkiomen Railroad.
Pa. R. R .....Pennsylvania Railroad.
Peters. R. R.....Petersburgh Railroad.
P. A. L. R. R .....Piedmont Air Line Railroad.
P. B. R. R.....Peach Bottom Railroad.
P. & B. C. R. R.....Philadelphia and Baltimore Central Railroad.
P. & C. R. R. .....Pittsburgh and Connellsville Railroad.
P., C. & St. L. R. R ....Pittsburgh, Cincinnati and St. Louis Railroad.
P. & D. R. R.....Passaic and Delaware Railroad.
Pa. & Del. R. R .....Pennsylvania and Delaware Railroad.
P., D. & E. R. R .....Peoria, Decatur and Evansville Railroad.
P. & E. R. R. .....Philadelphia and Erie Railroad.
Paducah & E. R. R ....Paducah and Elizabethtown Railroad.
P., Ft. W. & C. R. R...Pittsburgh, Fort Wayne and Chicago Railroad.
P., G. F. & C. R. R ....Portsmouth, Great Falls and Conway Railroad.
P., H. & B. R. R.....Poughkeepsie, Hartford and Boston Railroad.
P. H. & N. W. R. R ....Port Huron and Northwestern Railroad.
P. & K. C. R. R .....Parker and Kansas City Railroad.
P., K. & P. R. R .....Plymouth, Kankakee and Pacific Railroad.
Port. & Ogden. R. R ...Portland and Ogdensburg Railroad.
Phil. & N. R. R.....Philadelphia and Newtown Railroad.
P. & P. R. R .....Pennsylvania and Petroleum Railroad.
P., P. & J. R. R .....Peoria, Pekin and Jacksonville Railroad.
P. R. R. R .....Port Royal Railroad.
Phil. & R. R. R .....Philadelphia and Reading Railroad.
P. & R. I. R. R .....Peoria and Rock Island Railroad.
Prov. & Spring. R. R...Providence and Springfield Railroad.
Phil. & T. R. R .....Philadelphia and Trenton Railroad.
P., T. & B. R. R.....Pittsburgh, Titusville and Buffalo Railroad.
P., V. & C. R. R .....Pittsburgh, Virginia and Charleston Railroad.
Prov. & Worces. R. R ..Providence and Worcester Railroad.
P., W. & B. R. R.....Philadelphia, Wilmington and Baltimore Railroad
Prov., Warren & Bristol R. R .....Providence, Warren and Bristol Railroad.
R. & A. R. R.....Richmond and Alleghany Railroad.
R. & A. A. L. R. R .....Raleigh and Augusta Air Line Railroad.

R. & C. R. R ..... Reading and Columbia Railroad.
Rome & C. R. R..... Rome and Clinton Railroad.
R. & D. R. R..... Richmond and Danville Railroad.
R., F. & P. R. R ..... Richmond, Fredericksburgh and Potomac Railroad.
R. G. R. R..... Rio Grande Railroad.
R. & G. R. R..... Raleigh and Gaston Railroad.
R. H. R. R ..... Rich Hill Railroad.
R., N. & P. R. R..... Rochester, Nunda and Pennsylvania Railroad.
R. & P. R. R ..... Richmond and Petersburgh Railroad.
R. & S. L. R. R..... Rochester and State Line Railroad.
R. & S. R. R ..... Rensselaer and Saratoga Railroad.
R. V. & B. & C. R. R ... Republican Valley and Burlington and Colorado Railroad.
R., W. & O. R. R ..... Rome, Watertown and Ogdensburgh Railroad.
R., Y. R. & C. R. R..... Richmond, York River and Chesapeake Railroad.
S. R. R ..... Salisbury Railroad.
S. & A. R. R ..... Shenango and Allegheny Railroad.
Spring, Athol & Northern R. R ..... Springfield, Athol and Northern Railroad.
S. B. R. R ..... Summit Branch Railroad.
S. & B. R. R..... Syracuse and Binghamton Railroad.
S. C. R. R ..... Southern Central Railroad.
S. Carolina R. R ..... South Carolina Railroad.
S. & C. R. R..... Savannah and Charleston Railroad.
S. C. & D. R. R..... Sioux City and Dakota Railroad.
S. C. & J. R. R ..... Short Creek and Joplin Railroad.
S. C. & P. R. R ..... Sioux City and Pacific Railroad.
S. & C. V. R. R..... Syracuse and Chenango Valley Railroad.
S., G. & C. R. R ..... Syracuse, Geneva and Corning Railroad.
St. J. & D. C. R. R ..... Saint Joseph and Denver City Railroad.
S. K. & W. R. R..... Southern Kansas and Western Railroad.
S. & L. R. R ..... Sunbury and Lewiston Railroad.
St. L., I. Mt. & S. R. R. Saint Louis, Iron Mountain and Southern Railroad.
St. L., K. C. & N. R. R . Saint Louis, Kansas City and Northern Railroad.
S. L. & S. R. R..... State Line and Sullivan Railroad.
St. L. & S. E. R. R..... Saint Louis and South Eastern Railroad.
St. L. & S. F. R. R..... Saint Louis and San Francisco Railroad.
St. L., S. & L. R. R. R .. Saint Louis, Salem and Little Rock Railroad.
St. L., V. & T. H. R. R .. Saint Louis, Vandalia and Terre Haute Railroad.
S. & M. R. R ..... Savannah and Memphis Railroad.
S. & M. P. R. R..... Somerset and Mineral Point Railroad.
S. & N. B. R. R..... Selinsgrove and North Branch Railroad.
S. P. R. R ..... Southern Pacific Railroad.
S. & P. R. R ..... Sacramento and Placerville Railroad.
St. P. & P. R. R ..... Saint Paul and Pacific Railroad.
St. P. & S. C. R. R..... Saint Paul and Sioux City Railroad.
S. P., S., & T. F. R. R .. Saint Paul, Stillwater and Taylor's Falls Railroad.
S., R. & D. R. R ..... Selma, Rome and Dalton Railroad.
S. & R. R. R ..... Seaboard and Roanoke Railroad.
S. & S. R. R..... Schuykill and Susquehanna Railroad.
S. & S. W. R. R ..... Salina and South Western Railroad.
S. W. R. R ..... South Western Railroad.
S. W. Pa. R. R ..... South West Pennsylvania Railroad.
T. C. R. R..... Texas Central Railroad.
T. & C. R. R ..... Tyrone and Clearfield Railroad.
T., E. & S. L. R. R ..... Tioga, Elmira and State Line Railroad.

T. H. & Inds. R. R .....Terre Haute and Indianapolis Railroad.
T. H. & S. R. R.....Terre Haute and Southeastern Railroad.
T. & N. O. R. R .....Texas and New Orleans Railroad.
T. & P. R. R .....Texas and Pacific Railroad.
T. P. & W. R. R.....Toledo, Peoria and Warsaw Railroad.
T. W. & W. R. R .....Toledo, Wabash and Western Railroad.
U. & B. R. R. R .....Utica and Black River Railroad.
U. C. R. R .....Utah Central Railroad.
U., C. & B. R. R.....Utica, Clinton and Binghamton Railroad.
U., C. & S. R. R.....Utica, Chenango and Susquehanna Valley Railroad.
U. & D. R. R.....Ulster and Delaware Railroad.
U., I. & E. R. R.....Utica, Ithaca and Elmira Railroad.
U. & N. R. R.....Utah and Northern Railroad.
U. & N. F. R. R .....Ursina and North Fork Railroad.
U. P. R. R .....Union Pacific Railroad.
U. S. R. R .....Utah Southern Railroad.
U. & T. R. R.....Union and Titusville Railroad.
U. T. Co. R. R.....Union Transit Company Railroad.
U. W. R. R.....Utah Western Railroad.
V. R. R .....Valley Railroad.
Vt. & Mass. R. R .....Vermont and Massachusetts Railroad.
V., M., T. & G. R. R ....Vermont, Massachusetts, Troy and Greenfield Railroad.
V. & N. R. R .....Vicksburg and Nashville Railroad.
Vt. Valley R. R .....Vermont Valley Railroad.
W. R. R.....Western Railroad (Ala.).
W. & A. R. R .....Western and Atlantic Railroad.
W. C. R. R .....West Chester Railroad.
Wis. Cent. R. R .....Wisconsin Central Railroad.
W. C. & P. R. R .....West Chester and Philadelphia Railroad.
W. C., Va. M. & G. S. R. R Washington City, Virginia Midland and Great Sou Railroad.
W. & E. R. R.....Williamsport and Elmira Railroad.
W. & E. Canal.....Wabash and Erie Canal.
W. J. R. R.....West Jersey Railroad.
W. N. C. R. R .....Western North Carolina Railroad.
W. Md. R. R .....Western Maryland Railroad.
W. & O. R. R.....Washington and Ohio Railroad.
W. & O. & O. C. R. R..Western and Oregon, and Oregon Central Railroad.
W. Pa. R. R .....West Pennsylvania Railroad.
W. & R. R. R.....Wilmington and Reading Railroad.
W., St. L. & P. R. R....Wabash, Saint Louis and Pacific Railroad.
W. V. R. R.....Walkill Valley Railroad.
Wis. Val. R. R .....Wisconsin Valley Railroad
Warwick V. R. R.....Warwick Valley Railroad.
W. Va. C. & P. R. R. ..West Virginia Central and Pittsburgh Railroad.
W. & W. R. R.....Wilmington and Western Railroad.
Yough. R. R .....Youghiogheny Railroad.
Y. Br. Pa. R. .....York Branch Pennsylvania Railroad.

ALABAMA.

Station.	Authority.	Elevation.
		Feet.
Acron	Ala. G. S. R. R	149
Alexander City	S. & M. R. R	742
Alpine	S. R. & D. R. R.	470
Ambeson	S. R. & D. R. R.	702
Ashly	S. R. & D. R. R.	456
Atalla	Ala. G. S. R. R	602
Athens	L. N. S. & N. A. R. R.	707
Bangor	L. N. S. & N. A. R. R.	466
Barclay	S. R. & D. R. R.	509
Barton	Memphis & C. R. R	498
Batesville	M. & E. R. R.	280
Battles	Ala. G. S. R. R	152
Beaver Meadow	M. & O. R. R.	136
Bellefonte	Memphis & C. R. R	639
Belleview	A. C. R. R.	160
Bibb Mills	S. R. & D. R. R.	446
Birmingham	Ala. G. S. R. R.	596
Blount Springs	L. N. S. & N. A. R. R	432
Blue Mountain	S. R. & D. R. R.	791
Boligee	Ala. G. S. R. R	123
Boyle	L. N. S. & N. A. R. R.	522
Brandon	Ala. G. S. R. R	896
Brierfield	S. R. & D. R. R.	388
Brocks	L. N. S. & N. A. R. R.	562
Brownsboro'	Memphis & C. R. R	631
Brown's Cut	Ala. G. S. R. R	244
Burnsville	S. R & D. R. R.	182
Cahabamines	L. N. S. & N. A. R. R.	598
Calera	L. N. S. & N. A. R. R.	500
Calvert	M. & A. G. T. R. R.	57
Camp Hill	S. & M. R. R	733
Carson	M. & A. G. T. R. R.	54
Carthage	Ala. G. S. R. R.	176
Centerville, west bank Cahaba, opp	M. & A. G. R. R	252
Chehaw	W. R. R., of Ala	252
Chestang	M. & A. G. T. R. R.	43
Childersburgh	S. R. & D. R. R.	416
Chinchilla	M. & O. R. R.	78
Citronelle	M. & O. R. R.	317
Clanton	L. N. S. & N. A. R. R.	594
Clays	S. R. & D. R. R.	193
Clear Creek	L. N. S. & N. A. R. R.	538
Clements	Ala. G. S. R. R	419
Cleveland	M. & A. G. T. R. R.	15
Cossada	L. N. S. & N. A. R. R.	183
Cold Creek	M. & A. G. T. R. R.	34
Collinsville	Ala. G. S. R. R	738
Columbiana	S. R. & D. R. R.	535
Columbus	W. R. R	262
Coopers	L. N. S. & N. A. R. R.	456
Coosa Station	S. R. & D. R. R.	447
Cottondale	Ala. G. S. R. R	273
Courtland	Memphis & C. R. R	560
Coxe's	S. R. & D. R. R.	373
Creola	M. & A. G. T. R. R.	23
Cross Plains	S. R. & D. R. R.	697
Cuba	Ala. G. S. R. R	219
Cullman	L. N. S. & N. A. R. R.	800

Station.	Authority.	Elevation
		Feet
Cunningham	L. N. S. & N. A. R. R	43
Currys	S. R. & D. R. R	54
Dadeville	S. & M. R. R	75
Deatsville	L. N. S. & N. A. R. R	29
Decatur	L. N. S. & N. A. R. R	57
Deer Park	M. & O. R. R	14
Dickson	Memphis & C. R. R	48
Dixie	S. R. & D. R. R	28
Elkmont	L. N. S. & N. A. R. R	796
Elmore	L. N. S. & N. A. R. R	197
Epes	Ala. G. S. R. R	129
Eufaula	M. & E. R. R	200
Eureka	Ala. G. S. R. R	979
Eutaw	Ala. G. S. R. R	189
Falkville	L. N. S. & N. A. R. R	601
Fitzpatrick's	M. & E. R. R	262
Flint	L. N. S. & N. A. R. R	566
Foots	L. N. S. & N. A. R. R	646
Fort Deposit	M. & M. R. R	520
Fort Payne	Ala. G. S. R. R	883
Gardners'	S. R. & D. R. R	542
Gilmer	L. N. S. & N. A. R. R	536
Gold Hill	S. & M. R. R	765
Goldsby	A. C. R. R	183
Goodwater	S. & M. R. R	867
Greenpond	Ala. G. S. R. R	491
Greenwood	Ala. G. S. R. R	691
Griffiths' Mills	S. R. & D. R. R	691
Hampden	M. & A. G. T. R. R	180
Harpsville	Ala. G. S. R. R	186
Harrall's Cross-roads	A. C. R. R	192
Harris	L. N. S. & N. A. R. R	562
Hartsell's	L. N. S. & N. A. R. R	671
Hays Mills	L. N. S. & N. A. R. R	751
Helena	L. N. S. & N. A. R. R	398
Hollimans	Ala. G. S. R. R	937
Hulls	Ala. G. S. R. R	141
Huntsville	Memphis & C. R. R	612
Ironton	L. N. S. & N. A. R. M	650
Jackson	M. C. & T. R. R	459
Jackson's Gap	S. & M. R. R	690
Jacksonville	S. R. & D. R. R	628
Jamison	L. N. S. & N. A. R. R	704
Jonesboro'	Ala. G. S. R. R	527
Jones Station	A. C. R. R	209
Kellyton	S. & M. R. R	800
Kymulga	S. R. & D. R. R	426
Ladiga	S. R. & D. R. R	671
Larkinsville	Memphis & C. R. R	620
Lary's	L. N. S. & N. A. R. R	160
Leighton	Memphis & C. R. R	563
Leona	M. & A. G. T. R. R	54
Livingston	Ala. G. S. R. R	144
Logan	A. C. R. R	134
Lomax	L. N. S. & N. A. R. R	623
McCalla	Ala. G. S. R. R	485
McDonald	L. N. S. & N. A. R. R	683
Madison	Memphis & C. R. R	573
Maplesville	S. R. & D. R. R	356
Marion	M. & A. G. T. R. R	253
Matthews	M. & E. R. R	262
Maxwell	Ala. G. S. R. R	176
Midway	M. & E. R. R	506

Station.	Authority.	Elevation.
		Feet.
Milner	L. N. S. & N. A. R. R	838
Miner Station	A. C. R. R	119
Mitchell	M. & E. R. R	252
Mobile	M. & O. R. R	6
" Signal Station	U. S. Signal Office	69
Montevallo	S. R. & D. R. R	469
Montgomery	L. N. S. & N. A. R. R	162
" Signal Station	U. S. Signal Office	219
Morris	L. N. S. & N. A. R. R	406
Mountain Creek	L. N. S. & N. A. R. R	540
Mount Vernon	M. & A. G. T. R. R	49
Munford	S. R. & D. R. R	621
Nebo Mount, tunnel at grade	M. & A. G. T. R. R	330
" summit of mount	M. & A. G. T. R. R	449
Oak Grove	M. & E. R. R	226
Olmstead	Ala. G. S. R. R	288
Opelika	W. R. R., of Ala	812
Oxford	S. R. & D. R. R	653
Patona	S. R. & D. R. R	689
Peeples	S. R. & D. R. R	213
Pelham	L. N. S. & N. A. R. R	425
Pensacola Junction	M. & M. R. R	68
Phelan	L. N. S. & N. A. R. R	790
Pike Road	M. & E. R. R	295
Plantersville	S. R. & D. R. R	241
Platean	M. & A. G. T. R. R	37
Pollard	M. & M. R. R	67
Randolph	S. R. & D. R. R	548
Reese	Ala. G. S. R. R	599
Reid	L. N. S. & N. A. R. R	591
Scottsboro'	Memphis & C. R. R	652
Selma	W. R. R	122
" n. e. bank Alabama River	A. C. R. R	110
" Junction, Western R. R	A. C. R. R	108
" crossing, S. R. & D. R. R	A. C. R. R	112
" Depot, Broad street	A. C. R. R	122
" crossing, N. O. & S. R. R	A. C. R. R	121
Sepulga	M. & M. R. R	200
Shade's Creek	L. N. S. & N. A. R. R	610
Shelby Springs	S. R. & D. R. R	529
Siluria	L. N. S. & N. A. R. R	462
Silver Run	S. R. & D. R. R	630
Slade's	M. & A. G. T. R. R	54
Smallwood's	Ala. G. S. R. R	429
Spring Hill	M. & E. R. R	312
Springville	Ala. G. S. R. R	727
Standiford	Ala. G. S. R. R	574
Steel's	Ala. G. S. R. R	610
Stevenson	Memphis & C. R. R	602
Stewart's	Ala, G. S. R. R	159
Sturdevant	S. & M. R. R	497
Sunflower	M. & A. G. T. R. R	28
Sword's Mills	S. R. & D. R. R	741
Talladega	S. R. & D. R. R	561
Tannehill	Ala. G. S. R. R	485
Taylor's	A. C. R. R	173
Tensas	M. & M. R. R	8
Thompson's	M. & E. R. R	289
Three-Notch Road	M. & E. R. R	492
Town Creek	Memphis & C. R. R	560
Trinity	M. & C. R. R	634
Trussville	Ala. G. S. R. R	702
Tuscaloosa	Ala. G. S. R. R	181

Station.	Authority.	Elevation
		Feet.
Tuscumbia	Memphis & C. R. R	48[illegible]
Union Springs (M. & G. R. R. crossing)	M. & E. R. R	49[illegible]
Uniontown (Ala. Cen. R. R. crossing)	M. & A. G. T. R. R	274
Do ....Depot	A. C. R. R	282
Valley Head	Ala. G. S. R. R	1,031
Vance's	Ala. G. S. R. R	514
Verbena	L. N. S. & N. A. R. R	448
Veto	S. R. & D. R. R	160
Warrior	L. N. S. & N. A. R. R	547
Waverly	S. & M. R. R	805
West Point	W. R. R. of Ala	417
Wetumpka	L. N. S. & N. A. R. R	183
Whistler	M. & O. R. R	41
Whiting	L. N. S. & N. A. R. R	553
Whitney	Ala. G. S. R. R	613
Wilhite	L. N. S. & N. A. R. R	606
Williams' Cross-Roads	Ala. G. S. R. R	514
Wilsonville	S. R. & D. R. R	427
Woodstock	Ala. G. S. R. R	519
Woodville	Memphis & C. R. R	596
York	Ala. G. S. R. R	159

ALASKA.

Station.	Authority.	Elevation.
		Feet.
Adakh	U. S. C. & G. S	5,678
Akutan	U. S. C. & G. S	3,888
Atka	U. S. C. & G. S	4,988
Avatanak	U. S. C. & G. S	1,207
Bogosloff	U. S. C. & G. S	844
Bouldys, Peak of	U. S. C. & G. S	1,145
Chuqul	U. S. C. & G. S	3,109
Cook, Mt	Dall	16,000
Crillon, Mt	Dall	15,900
Devastation, Mt	U. S. C. & G. S	5,525
Edgecombe, Mt	U. S. C. & G. S	2,855
Fairweather, Mt	Malespina	14,589
Do	Tebenkoff	14,000
Do	Vasilieff	13,946
Do	Russian hydro. chart	14,708
Do	English Admiralty chart	14,708
Do	Tebenkoff, chart iii	13,864
Do	Dall	15,500
Gareloi	U. S. C. & G. S	5,334
Garyalaya	U. S. C. & G. S	11,270
Illiaminsk	U. S. C. & G. S	12,066
Kyska, North Peak	U. S. C. & G. S	4,085
Macushin	U. S. C. & G. S	5,961
St. Elias, Mt	Malespina	17,854
Do	Tebenkoff	16,938
Do	La Perouse	12,661
Do	English hydro. chart	14,970
Do	Russian hydro. chart	17,854
Do	Dall	19,500
Shishaldin	U. S. C. & G. S	8,683
Sitka, Signal Station	U. S. Signal Office	63
Tanaga	U. S. C. & G. S	7,108
Unalaska	U. S. C. & G. S	5,961
Unimak	U. S. C. & G. S	8,954
Verstooa	U. S. C. & G. S	3,374
Vsevidoff	U. S. C. & G. S	8,868

ARIZONA.

Station.	Authority.	Elevation.
		Feet.
Acorn Spring	Powell	6,360
Adonde	S. P. R. R. of Ariz	214
Agua Prieta		4,017
Allentown	A. & P. R. R	6,026
Angell	A. & P. R. R	5,879
Antelope Springs	Wheeler	8,065
Anvil Rock	Wheeler	5,354
Apache Camp	Wheeler	5,000
" Signal Station	U. S. Signal Office	5,004
Apache Spring	Wheeler	6,124
Arch Spring	Toner	6,350
Ash Fork	A. & P. R. R	5,105
Aspen Spring		7,381
Aubrey	A. & P. R. R	5,128
Aubrey Cliffs	Powell	7,330
Aubrey Valley	Toner	5,156
Beale	A. & P. R. R.	3,472
Beale's Pass	R. P. R. R. surveys	2,127
Bear Springs		4,264
Bellemonte	A. & P. R. R	7,099
Benson	S. P. R. R.	3,580
Benson Junction	A. T. & S. F. R	3,521
Big Cañon		1,426
Billings	A. & P. R. R	5,372
Bill Williams Mt	Ives	6,620
Bitter Spring	Powell	4,890
Bitter Spring Peak	Powell	6,700
Blue Spring	Wheeler	7,796
Bowers' Ranch	Wheeler	4,412
Bowie	S. P. R. R	3,761
Bowie, Camp	Wheeler	4,872
Brookline	A. T. & S. F. R. R	4,462
Buchanan, Fort	Med. Dpt. U. S. A	5,330
Bush's Ranch	Wheeler	7,704
Cactus	S. P. R. R	4,224
Canby, Fort	Med. Dept., U. S. A	6,500
Canister	A. T. & S. F. R. R	3,618
Cañon Springs	Wheeler	5,498
Cariso, Mt	Hayden	9,280
Carrizo	A. & P. R. R	5,199
Casa Grande	S. P. R. R. of Ariz	1,398
Cave Spring	Wheeler	6,031
Cedar Forest		5,868
Chalender	A. & P. R. R	6,837
Chino	A. & P. R. R	5,224
Chloride	Wheeler	4,201
Cienega	Wheeler	7,476
Cienega De San Simon	Wheeler	3,855
Colorado Chiquito Bridge	Wheeler	5,638
Colorado Plateau	Powell	6,000 to 8,000
Cooley's Ranch	Wheeler	5,367
Contention	A. T. & S. F. R. R	3,771
Cosnino	A. & P. R. R	6,434
Cosnino Caves	Wheeler	6,244
"	Pacific R. R. Reports	6,139
Cottonwood Spring	Wheeler	4,170
Coyote Spring	Wheeler	6,874

Station.	Authority.	Elevation.
		Feet.
Criswell's Ranch	Wheeler	5,772
Crittenden	A. T. & S. F. R. R	4,172
Crookton	A. & P. R. R	5,657
Cross Mt	Petermann	5,182
Crown Point	Powell	7,140
Date Creek, Camp	Toner	3,726
Deer Spring	Wheeler	5,981
Defiance, Fort	U. S. Geol. Survey	6,862
Demotte Park	Powell	5,800–6,000
Dennison	A. & P. R. R	4,979
Desert Station	Wheeler	2,135
Desert Tanks	Wheeler	5,192
Diablo Cañon	Toner	4,765
Duffer Crag	Powell	6,500
Echo Peak	Powell	5,360
Elgin	A. T. & S. F. R. R	4,690
El Puerto del Dado Pass	Petermann	5,433
Escudilla Mountain	Wheeler	10,691
Estrella	S. P. R. R. of Ariz	1,523
Fairbank Junction	A. T. & S. F. R. R	3,828
Fairview	A. & P. R. R	5,909
Flagstaff	A. P. R. R	6,862
Florence, Signal Station	U. S. Signal Office	1,553
Gila City	S. P. R. R. of Ariz	175
Gila Bend	S. P. R. R. of Ariz	739
Gnome Waterpocket (Wainupits Pikavu)	Powell	5,390
Goodwin, Camp (old)	Wheeler	2,816
Graham Mountain	Wheeler	10,516
Grant, Camp	Wheeler	4,833
Grant, Old Camp	Wheeler	2,118
Grant, Signal Station	U. S. Signal Office	4,737
Green's Peak	Wheeler	10,093
Hackberry	A. & P. R. R.	3,522
Ha-pa-ka-va'-te Spring	Powell	6,840
Hardy	A. & P. R. R	4,910
Hart's Ranch	Powell	8,970
Hatch Wells	Powell	5,290
Holbrook	A. & P. R. R	5,047
Hopo, Mt.	Peterson	6,321
House Rock Spring	Powell	5,730
Huachuca	A. T. & S. F. R. R	4,253
Hualapai	A. & P. R. R	3,277
Hualapais, Camp	Wheeler	5,322
Hualapais Spring		4,258
Humphreys' Peak	Wheeler	12,562
Jacob's Pool Point	Powell	6,890
Jacob's Pools	Powell	5,260
Jacob's Well	Pacific R. R. Reports	5,973
Do	Wheeler	6,065
Jaycock's Ranch	Wheeler	6,814
Kaibab Plateau		8,000
Kanab Plateau	Powell	5,000–6,400
Kane Spring	Powell	3,686
Kerlin's Well	Powell	5,502
Kingman	A. & P. R. R	3,303
Kisaha Waterpocket	Powell	5,980
La Pilla	Wheeler	5,850
Law's Spring	Powell	6,870
Lee's Ferry	Powell	3,170
Leroux Springs	Pacific R. R. Reports	7,378
Limestone Spring		5,680
Limestone Tanks	Powell	5,040
Limestone Water-pocket	Wheeler	5,405
Little Colorado River (mouth of)	Powell	2,699

Station.	Authority.	Elevation
		Feet.
Lockwood Spring	Wheeler	5,52
Los Lente	Wheeler	6,54
Los Nogales		3,83
Lowell, Camp	Wheeler	2,00
McPherson, Camp	Med. Dept., U. S. A	3,72
Maricopa	S. P. R. R. of Ariz.	1,18
Maricopa Wells	Pacific R. R. Reports	1,27
Mescal	S. P. R. R	4,03
Mineral Spring	Wheeler	6,67
Mi-shong-i-ni-vi (base of)	Powell	5,55
Moa Ava	Powell	4,70
Moencopie	Powell	4,7
Mohawk Summit	S. P. R. R. of Ariz	5
Moicava Settlement	Powell	4,7
Mojave, Camp	Wheeler	7
Do	Med. Dept., U. S. A	6
Do	Pacific R. R. Reports	6
Mogollon Mesa	Wheeler	7,5
Mooshaneh	Ives	5,8
Mountain Spring		5,5
Do	Powell	3,
Musha Lake	Powell	5,
Music Mt	Powell	6,
Navajo Mt	Powell	10,
Navajo Springs	A. & P. R. R	5,
Do	Powell	4,
Do	Wheeler	4,
Do	Wheeler	5,
Do	Pacific R. R. Reports	5,
Navajo Spring	Powell	5,
Nelson Tanks	Wheeler	6,
New Year's Spring	Ives	6,
Nogales	A. T. & S. F. R. R	3,
Nugent's Pass	K. P. R. R. surveys	4,
Do	T. & P. R. R. surveys	4,
Oak Spring	Powell	6,
Octoa	S. P. R. R	4,
Ojo de San Luis		5,
Oraibi Peak	Powell	6, 7
Oraibi Spring	Powell	5, 9
Oraibi	Wheeler	4, 7
Do	Powell	6, 0
Do	Ives	5, 8
Do Garden	Ives	6, 3
Ord Peak	Wheeler	10,2
Oval Butte	Powell	5,4
Pahghun-pahghun Springs		2,2
Painted Cañon, entrance	Wheeler	7
Painted Rock	S. P. R. R. of Ariz	7
Palo Verde	A. & P. R. R	1,06
Pantano	S. P. R. R. of Ariz	3,53
Papago	S. P. R. R. of Ariz	3,01
Parapet Plateau	Powell	4,000–7,00
Paria Plateau (eastern edge)	Powell	7,27
Do	Powell	6,000–7,30
Paria Spring	Wheeler	6,89
Park Spring	Toner	7,19
Peach Orchard Spring	Wheeler	6,27
Peach Spring	A. & P. R. R	4,75
Peach-tree Spring	Powell	4,11
Peacock Spring	Toner	3,17
Pearl Spring	Toner	5,31
Phenix, Signal Station	U. S. Signal Office	1,06

Station.	Authority.	Elevation.
		Feet.
Phippeny Spring	Powell	3,690
Picacho	S. P. R. R. of Ariz	1,618
Do	Wheeler	1,750
Picacho Peak	Petermann	4,754
Picacho Spring		4,870
Picket Post	Wheeler	2,669
Pimas Villages		1,440
Pine Tanks	Wheeler	5,648
Pinneveta	A. & P. R. R	5,084
Pipe Spring	Powell	4,890
Pipe Spring Point	Powell	6,560
Pipo Springs	Wheeler	5,397
Playa de los Pimas	Toner	4,149
Polliwog Spring	Powell	4,500
Pottery Hill	Ives	5,722
Powell	A. & P. R. R	418
Prescott	Wheeler	5,316
Prieto Crossing	Wheeler	5,332
Pueblo Colorado	Wheeler	6,401
Pueblo Viega	Wheeler	2,712
Quercus Cañon	Mexican Boundary Survey	4,170
Rachel Butte	Powell	6,720
Railroad Pass	Ives	3,764
Do	K. P. R. R. surveys	4,356
Do	T. & P. R. R	4,490
Railroad Pass Station	S. P. R. R	4,396
Rawlins, Camp (old)	Wheeler	4,666
Red Butte	Powell	7,690
Red Mesa	Powell	5,510
Red Rock	S. P. R. R. of Ariz	1,867
Relief Springs	Wheeler	5,526
Rillito	S. P. R. R. of Ariz	2,060
Rock Spring	Wheeler	6,849
Rock Spring, Fort		4,972
Runk's Pass	K. P. R. R. surveys	4,312
Russell Point	Powell	7,280
Russell's Tank	Toner	5,285
Saccaton		1,066
Sacramento	A. & P. R. R	2,587
Safford	Wheeler	2,711
Saint John's	Wheeler	5,650
Saint Joseph	A. & P. R. R	4,979
Salt Spring	Wheeler	4,747
San Carlos Agency	Wheeler	2,456
Sanders	A. & P. R. R	5,807
Sanford's	A. T. & S. F. R. R	3,726
San Francisco, Mt	P. R. R. Reports	12,052
Do	Wheeler	12,562
Do (edge of crater)	Wheeler	10,122
Do (timber line)	Wheeler	11,468
San Francisco Spring	Pacific R. R. Reports	6,666
San Simon	S. P. R. R. Reports	3,611
Sentinel	S. P. R. R. of Ariz	690
Shi—wits Plateau		7,000
Do	Powell	5,800–6,200
Shungo-pah-we	Wheeler	6,032
Sichoamavi	Powell	6,070
Sierra Blanca, (timber line on)		11,100
Signal Peak	Wheeler	9,330
Silver Spring	Wheeler	6,169
Sitgreaves Pass	Ives	3,652
Skull Valley, Camp	Med. Dept., U. S. A	5,000
Sonoita	A. T. & S. F. R. R	4,824

Station.	Authority.	Elevat
		F
Lockwood Spring	Wheeler	5,
Los Lente	Wheeler	6,
Los Nogales		3,
Lowell, Camp	Wheeler	2,
McPherson, Camp	Med. Dept., U. S. A	3,
Maricopa	S. P. R. R. of Ariz.	1,
Maricopa Wells	Pacific R. R. Reports	1,
Mescal	S. P. R. R	4,
Mineral Spring	Wheeler	6,
Mi-shong-i-ni-vi (base of)	Powell	5,
Moa Ava	Powell	4,
Moencopie	Powell	4,
Mohawk Summit	S. P. R. R. of Ariz	
Moicava Settlement	Powell	4,
Mojave, Camp	Wheeler	
Do	Med. Dept., U. S. A	
Do	Pacific R. R. Reports	
Mogollon Mesa	Wheeler	7,
Mooshaneh	Ives	5,
Mountain Spring		5,
Do	Powell	3,
Musha Lake	Powell	5,
Music Mt	Powell	6,
Navajo Mt	Powell	10,
Navajo Springs	A. & P. R. R	5,
Do	Powell	4,
Do	Wheeler	4,
Do	Wheeler	5,
Do	Pacific R. R. Reports	5,
Navajo Spring	Powell	5,
Nelson Tanks	Wheeler	6,
New Year's Spring	Ives	6,
Nogales	A. T. & S. F. R. R	3,
Nugent's Pass	K. P. R. R. surveys	4,
Do	T. & P. R. R. surveys	4,
Oak Spring	Powell	6,
Octoa	S. P. R. R	4,
Ojo de San Luis		5,
Oraibi Peak	Powell	6,
Oraibi Spring	Powell	5,
Oraibi	Wheeler	4,
Do	Powell	6,
Do	Ives	5,
Do Garden	Ives	6
Ord Peak	Wheeler	10
Oval Butte	Powell	5
Pahghun-pahghun Springs		2
Painted Cañon, entrance	Wheeler	
Painted Rock	S. P. R. R. of Ariz	
Palo Verde	A. & P. R. R	1
Pantano	S. P. R. R. of Ariz	3
Papago	S. P. R. R. of Ariz	3
Parapet Plateau	Powell	4,000–7
Paria Plateau (eastern edge)	Powell	7
Do	Powell	6,000–7
Paria Spring	Wheeler	6
Park Spring	Toner	7
Peach Orchard Spring	Wheeler	6
Peach Spring	A. & P. R. R	4
Peach-tree Spring	Powell	4
Peacock Spring	Toner	3
Pearl Spring	Toner	5
Phenix, Signal Station	U. S. Signal Office	1

ARKANSAS.

Station.	Authority.	Elevation.
		Feet.
r	St. L., I. Mt. & S. R. R.	330
	Toner	244
	L. R. & Ft. S. R. R.	477
	L. R. & Ft. S. R. R	581
	M. & L. R. R. R	301
hia	St. L., I. Mt. & S. R. R.	191
	L. R. & Ft. S. R. R	399
	St. L., I. Mt. & S. R. R.	258
ross	Toner	246
	St. L., I. Mt. & S. R. R.	250
	St. L., I. Mt. & S. R. R.	283
lle	Smithsonian Inst	1,790
	St. L., I. Mt. & S. R. R.	246
	M. & L.R. R. R	200
	Smithsonian Inst	650
ek	L. R. & Ft. S. R. R	449
	Toner	279
	Toner	123
	Toner	223
n	Toner	1,412
le	L. R. & Ft. S. R. R	409
	L. R. & Ft. S. R. R	510
	L. R. & Ft. S. R. R	361
	St. L., I. Mt. & S. R. R.	294
e	Toner	268
Bluff	M. & L. R. R. R	181
ille	Toner	1,350
Barrens	Smithsonian Inst	1,000
ity	M. & L. R. R. R	281
h	L. R. & Ft. S. R. R	467
ed River Bridge	St. L., I. Mt. & S. R. R.	272
anding	Toner	149
le	Toner	500
	Toner	211
	L. R. & Ft. S. R. R	451
wn	L. R. & Ft. S. R. R.	353
aise	St. L , I. Mt. & S. R. R.	226
	St. L., I. Mt. & S. R. R.	213
n	Toner	210
	Toner	243
	St. L., I. Mt. & S. R. R.	357
, opp. Memphis	M. & L. R. R. R	218
extreme h. w. in Mississippi Riv.		217
d	L. R. & Ft. S. R. R	404
gs	Toner	718
ort	Toner	214
ille	St. L., I. Mt. & S. R. R.	287
	L. R. & Ft. S. R. R	330
	St. L., I. Mt. & S. R. R.	222
	St. L , I. Mt. & S. R. R	229
	Toner	271
	L. R. & Ft. S. R. R	437
lle	M. & L. R. R. R	210
a	Pacific R. R. Reports	632
ck	St. L., I. Mt. & S. R. R.	263
...Signal Station	U. S. Signal Office	298
's	Toner	242

Station.	Authority.	Elevat
		1
Spears' Ranch	Wheeler	
Springerville	Wheeler	6
Stanwix	S. P. R. R. of Ariz	
Steven's Ranch	Powell	4
Summit Spring	Wheeler	7
Sunset Crossing	Wheeler	4
Sunset Gap	Wheeler	5
Sunset Tanks	Wheeler	5
Supai	A. & P. R. R	6
Sweet Water	S. P. R. R. of Ariz	1
Taylor, Mt	Wheeler	11
Tegua	Powell	6
Do	Wheeler	6
Terra	Powell	6
Texas Hill	S. P. R. R. of Ariz	
Thomas Peak	Wheeler	11
Thompson's Spring	Powell	4
Thousand Wells	Powell	5
Tipton Mesa	Powell	6
Tipton Peak	Wheeler	7
Tonto Pass	A. & P. R. R. surveys	7
Toroweap Valley	Powell	4
Trident Point	Powell	6
Trumbull, Mt	Powell	8
Truxton	A. & P. R. R	4
Truxton Springs	Wheeler	3
Tubac	Toner	3
Tucson	S. P. R. R. of Ariz	2
Do	Wheeler	2
Do. Signal Station	U. S. Signal Office	2
Tull Spring	Wheeler	5
Uinkaret Plateau	Powell	5,400–6
Union Pass	Wheeler	3
Val de Chino	Pacific R. R. Reports	5
Verde, Camp	Wheeler	3
Vigil's Ranch	Wheeler	5
Volunteer Spring	Wheeler	7
Wag-a-thi-le Spring	Powell	6
Wallipi Pass	K. P. R. R. surveys	3
Walpi	Powell	6
Washington Pass	Wheeler	8
Washi-pahghum Springs		4
Whipple, Fort	Wheeler	5
Do	Pacific R. R. Reports	5
Whipple Pass	K. P. R. R. surveys	7
White Rock Spring	Wheeler	6
White's Ranch		1
Whitlock's Cienega	Wheeler	3
Willcox	S. P. R. R	4
Williams	A. & P. R. R	6
Williams' Ranch	Wheeler	7
Willow Grove		4
Willow Spring	Wheeler	7
Winslow	A. & P. R. R	4
Wonsit's Plain	Powell	4,500–5
Yampai	A. & P. R. R	5
Yampa Junction		5
Yucca	A. & P. R. R	1
Yuma	S. P. R. R	
Do. Signal Station	U. S. Signal Office	

CALIFORNIA.

Station.	Authority.	Elevation.
		Feet.
ll	U. S. C. & G. S	1,232
	U. S. C. & G. S	375
		59
	Cal. P. R. R	76
lt	Wheeler	8,431
	Wheeler	282
adows	Wheeler	6,594
iente	Emory	3,013
	Wheeler	725
	Wheeler	3,617
ocho	P. R. R. Reports	—70
Island	U. S. C. & G. S	143
s	P. R. R. Reports	46
	C. P. R. R	2,822
	C. P. R. R	3,607
	C. P. R. R	740
	Wheeler	4,365
Hill	Wheeler	4,459
nch	Wheeler	1,494
	C. P. R. R	130
	Toner	33
, Mt	Whitney	9,000
and, N. W	U. S. C. & G. S	159
and Peak	U. S. C. & G. S	782
	Toner	161
	C. P. R. R	154
Ranch	Wheeler	359
Spring	Wheeler	4,272
ing	Wheeler	5,697
	C. P. R. R	55
Bridge	Wheeler	3,375
gs	Wheeler	1,810
	C. P. R. R	1,360
	Smithsonian Inst	1,176
	Wheeler	7,449
ra, Point	U. S. C. & G. S	171
	Wheeler	594
Camp	Williamson	384
t	U. S. C. & G. S	3,793
	Petermann	3,790
Ranch	Wheeler	4,076
Ranch	Wheeler	5,387
h Spring	Wheeler	6,284
ld	Wheeler	432
Ranch	Toner	3,285
ntain	Wheeler	5,829
	Wheeler	8,295
k	Wheeler	7,825
lt	Whitney	6,357
	L. A. & I. R. R	103
	C. P. R. R	30
	Monterey R. R	48
ntain	Wheeler	6,039
nch, Surprise Valley	Wheeler	4,680
Ranch	Wheeler	594
s Hotel	Wheeler	3,851
	C. P. R. R	64
reek Meadows	Wheeler	4,700

Station.	Authority.	Elevation.
		Feet.
London	L. R. & Ft. S. R. R	406
McAlmont	Toner	263
McLean's Landing	Toner	360
Madison, on St. Francis Bridge	M. & L. R. R. R	213
Do ..town proper		207
Malvern	St. L., I. Mt. & S. R. R	277
Mineral Spring	Toner	600
Minturn Spring	Toner	251
Moark	Toner	287
Montana	L. R. & Ft. S. R. R	432
Morrilton	L. R. & Ft. S. R. R	393
Mulberry	L. R. & Ft. S. R. R	439
Murta	Toner	261
Napoleon	Pacific R. R. Reports	142
Newport	St. L., I. Mt. & S. R. R	232
O'Kean	St. L., I. Mt. & S. R. R	276
Olyphant	Toner	215
Onita	L. R. & Ft. S. R. R	386
Ozark	L. R. & Ft. S. R. R	424
Palarm	L. R. & Ft. S. R. R	311
Peach Orchard	St. L., I. Mt. & S. R. R	290
Pittsburg	Toner	418
Plummerville	L. R. & Ft. S. R. R	333
Prescott	St. L., I. Mt. & S. R. R	328
Preston		790
Rockport	Toner	264
Russellville	L. R. & Ft. S. R. R	391
Smith, Fort	Med. Dept., U. S. A	460
Spadra	L. R. & Ft. S. R. R	422
Spring Hill	Smithsonian Inst	188
Swifton	St. L., I. Mt. & S. R. R	253
Texarkana	St. L., I. Mt. & S. R. R	303
Do ....(Junc. T. & J. Div. T. & P.)	T. & P. R. R	358
Van Buren	L. R. & Ft. S. R. R	449
Do ....h. w. Arkansas River, 1866)	L. R. & Ft. S. R. R	450
Do ....(l. w. Arkansas River, 1878)	L. R. & Ft. S. R. R	423
Walnut Ridge	St. L., I. Mt. & S. R. R	275
Ward	Toner	231
Warren	L. R. & Ft. S. R. R	331
Washington	Smithsonian Inst	660
White Oak	L. R. & Ft. S. R. R	435

Station.	Authority.	Elevation.
		Feet.
's Flat	Wheeler	1,964
's Peak	Wheeler	5,392
's Ranch	Wheeler	1,759
ye	Wheeler	4,938
orn Ranch (or Warren Station)	Wheeler	693
s Ranch	Wheeler	5,112
Vista	Wheeler	323
o	Nev. Co. N. G. R. R	2,618
Vista Oil Works		790
o Station	Wheeler	4,378
ws, Mt	Wheeler	4,267
Rock	Wheeler	9,157
Hill	U. S. C. & G. S	482
Creek Bridge	Wheeler	4,692
Creek House	Wheeler	5,758
Mt	Wheeler	7,830
s' Ferry	Wheeler	380
Camp	Wheeler	1,894
	Smithsonian Inst	2,000
nga Pass	Wheeler	750
Pass	Pacific R. R. Reports	4,676
Pass Divide	Wheeler	4,195
Ranch	Pacific R. R. Reports	412
eras Grove	Wheeler	4,730
te	C. P. R. R	1,290
o	Wheeler	1,314
te Springs	Wheeler	3,688
rnia City Point	U. S. C. & G. S	75
oga	C. P. R. R	331
o, Signal Station	U. S. Signal Office	2,527
tonville	Toner	2,388
Weldon (Mountain)	Wheeler	2,716
rake Ranch	Wheeler	3,904
las Ranch	Wheeler	799
n	C. P. R. R	90
de Turruco Pass		4,256
Spring	Wheeler	1,238
Station	Wheeler	2,650
n Grande	Pacific R. R. Reports	730
s Ranch	Wheeler	7,780
s Spring	Wheeler	5,512
ndale	C. P. R. R	222
u Bridge, North Fork	Wheeler	2,843
o		431
s, Mt	Whitney	4,977
l, Mt	U. S. C. & G. S	4,415
lian Hot Springs	Wheeler	6,237
a Cañon Toll-house	Wheeler	6,596
a Pass	Goddard	7,972
o	Whitney	8,759
o	Wheeler	8,634
go		3,589
age, on Owens Lake	Wheeler	3,589
Mt	Wheeler	9,970
de	C. P. R. R	6,538
, Mt	Wheeler	9,013
Peak	Whitney	12,500
Rock	Wheeler	9,872
ville, on line of S. P. R. R	Monterey R. R	19
rines	S. P. R. R	512
dral Rock (lower)	Wheeler	6,430
dral Rock (higher)	Wheeler	6,529
y's Ranch	Wheeler	1,260

Station.	Authority.	Elevati
		F
Battle Hill		2,
Baxter's Station	Wheeler	4,
Bear Valley P. O	Wheeler	2,
Do..... Town Hotel	Wheeler	6,
Beckworth's Pass	Wheeler	5,
Do	R. R. surveys	4,
Do	Whitney	5,
Beckworth's Store	Wheeler	4,
Bell Mill	Wheeler	3,
Bello	Cal. P. R. R	
Benicia Arsenal	U. S. C. & G. S	
Benicia Barracks	Med. Dept., U. S. A	
Bennett's Wells, Death Valley	Wheeler	
Berenda	Toner	
Bidwell	Wheeler	4,
Bidwell Camp	Wheeler	4,
Do	Med. Dept., U. S. A	4,
Bidwell, Mt	Wheeler	8,
Bidwell's Bar, South Fork Feather River	Wheeler	
Bielowski	Whitney	3,
Biggs's	C. P. R. R	
Big Logan	Toner	
Big Meadow Ranch	Wheeler	6,
Big Meadows	Wheeler	4,
Big Oak Flat	Wheeler	2,
Big Springs	Wheeler	4,
Big Tree Grove, Calaveras County	Wheeler	4,
Big Tree Station	Wheeler	3,
Birds' Springs	Wheeler	3,
Black Bluff	U. S. C. & G. S	
Black Mountain	U. S. C. & G. S	2,
Blackmore's Ranch	Wheeler	2,
Black Ridge	U. S. C. & G. S	
Black Springs	Wheeler	6,
Blodgett's Ranch	Wheeler	
Blood's Station	Wheeler	6,
Blue Cañon	C. P. R. R	4,
Bluff Point	U. S. C. & G. S	
Board Ranch	Wheeler	4,
Boca	Wheeler	5,
Do	C. P. R. R	5,
Bodega Head	U. S. C. & G. S	
Bold's Ranch	Wheeler	
Bonita, Point	U. S. C. & G. S	
Boneyard Ranch	Wheeler	2,
Boot-jack Ranch	Wheeler	2,
Borden	Toner	
Boston Peak	Wheeler	6,
Bower Cave	Wheeler	2,
Box Elder		1,
Boyd's Ranch	Wheeler	
Bozeman's Ranch	Wheeler	3,
Brandy City		3,
Breccia Pass	Goddard	10,
Breckinridge, Mt	Wheeler	5,
Breckenridge, Mt	Wheeler	7,
Brewer, Mt	Whitney	13,
Brewery	Wheeler	2,
Bridgeport	Wheeler	1,
Bridgeport P. O	Wheeler	6,
Brighton	S. & P. R. R	
Brighton, Cross S. V. R. R	C. P. R. R	
Broncho	Wheeler	5,

Station.	Authority.	Elevation.
		Feet.
wood Station	Wheeler	2,488
·ville	Wheeler	1,665
eek Ranch, Sonora Road	Wheeler	5,905
ead Lake	Wheeler	6,041
ead Lake Spring	Wheeler	5,329
ring	Wheeler	3,876
'erry	Wheeler	250
es	Wheeler	934
Flat	Wheeler	6,054
Valley	Wheeler	3,185
Station		1,000
it City	Smithsonian Inst	12
	Wheeler	3,306
Ranch	Wheeler	5,157
	C. P. R. R	313
House	Wheeler	1,221
Fort	Med. Dept. U. S. A	3,390
Ranch, Clover Valley	Wheeler	5,464
Lake	R. R. Reports	5,907
son,'s	Wheeler	980
son s Vineyard	Wheeler	981
onga	C. P. R. R	952
	Wheeler	1,328
onga Peak	Wheeler	8,529
onga Ranch	Wheeler	1,168
s Ranch	Wheeler	5,278
gham's Ranch	Wheeler	387
	C. P. R. R	39
t's Pass	Goddard	6,824
ega	Wheeler	2,162
's Ranch	Wheeler	568
Mt	Whitney	13,227
Cañon	Wheeler	3,143
	C. P. R. R	54
Ranch.	Wheeler	451
ll Bridge	Wheeler	3,426
ood Peak	Wheeler	4,451
	C. P. R. R	68
pring	Wheeler	4,957
eek	Wheeler	4,518
y's Ranch	Wheeler	4,840
	C. P. R. R	313
Springs	Wheeler	1,989
's Station	Wheeler	2,922
Peak	Wheeler	6,910
Point	U. S. C. & G. S	202
Monte, Hotel	U. S. C. & G. S	2,327
Monte	U. S. C. & G. S	3,849
	C. P. R. R	65
Lake	R. R. Reports	5,964
	Wheeler	5,885
Pass	C. P. R. R. Surveys	7,901
	Whitney	7,056
Saw Mill	Wheeler	3,420
lmas	Wheeler	103
y	C. P. R. R	114
eville	Smithsonian Inst	2,200
eville Buttes	Whitney	8,400
	Wheeler	8,541
Ranch	Wheeler	1,090
esby's Ferry	Pacific R. R. Reports	954
Barracks	Med. Dept., U. S. A	32
r's	Wheeler	2,959

Station.	Authority.	Elevation.
		Feet.
Cavallos, Point de los	U. S. C. & G. S	126
Coyote Ridge	U. S. C. & G. S	1,034
Cedar, Mt	Wheeler	8,308
Cedar Point	Toner	5,614
Cedarville	Wheeler	4,675
Centerville	Wheeler	503
Cerro Gordo Landing, Col. River	Wheeler	3,656
Cerro Gordo Pass	Wheeler	8,874
Chapman's Ranch	Wheeler	4,992
Chapperal House	Wheeler	5,076
Chemehuevis Pass	K. P. R. R. surveys	675
Chico	C. P. R. R	193
Do	Smithsonion Inst	150
Do	Wheeler	177
Chinese Camp	Wheeler	1,299
Chiquita Peak	Wheeler	8,136
Chuckawalla	Wheeler	2,095
Cicero	C. P. R. R	90
Cienega	L. A. & I. R. R	121
Cisco	C. P. R. R	5,934
Cisco (site) South Fork Yuba River	Wheeler	5,654
Clark Peak	Wheeler	11,295
Clark's	Wheeler	3,925
Clark's Ranch	Wheeler	4,677
Clayton	Smithsonian Inst	76
Clear Lake	Wheeler	5,808
Clipper Gap	C. P. R. R	1,759
Cloud Rest	Wheeler	9,772
Clover Valley	Wheeler	3,464
Cohen's Ranch	Wheeler	281
Cohuilla Village	Pacific R. R. Reports	85
Colby's Ranch	Wheeler	4,990
Cold Spring	Wheeler	3,126
Do	Wheeler	5,375
Cold Spring Ranch	Wheeler	565
Cole's Ranch	Wheeler	1,221
Coleville (blacksmith shop)	Wheeler	5,190
Colfax	Nev. Co. N. G. R. R	2,422
Do	Wheeler	3,022
Colfax Junction, with Nevada Co. R. R	C. P. R. R	2,422
Colona		835
Colton	Wheeler	808
Do	C. P. R. R	965
Columbia	Toner	2,314
Columbia P. O	Wheeler	2,157
Columbia Rock (above valley)	Wheeler	5,005
Conejos	Wheeler	2,565
Conejos Ranch	Wheeler	579
Conness Peak	Wheeler	12,518
Contra Costa	U. S. C. & G. S	96
Cook's Point (Mountain)	Wheeler	6,336
Cook's Wells	Pacific R. R. Reports	—62
Coomb's Station	Wheeler	2,886
Cooper's Ranch	Wheeler	8,406
Copperopolis P. O	Wheeler	1,015
Corbett's Ranch	Wheeler	1,075
Corcoran, Mt	Wheeler	14,093
Cordolia	C. P. R. R	11
Do	Pacific R. R. Reports	69
Cory's Peak	Wheeler	11,326
Costa	C. P. R. R	85
Cottonwood	Toner	423
Cottonwood Island	Wheeler	787

Station.	Authority.	Elevation.
		Feet.
ce Creek	Wheeler	405
ce Springs	Wheeler	337
unction	C. P. R. R	49
n	U. S. C. & G. S	2,816
)	Whitney	3,381
ɔtown	Toner	2,433
ɔtown Pass	Whitney	7,119
)	C. P. R. R. Surveys	7,154
	Toner	193
lle	Wheeler	3,094
tnn	C. P. R. R	3,220
pring Ranch	Wheeler	2,014
ch's Ranch	Wheeler	4,883
Lake	Wheeler	4,697
r's Ranch	Wheeler	737
n's Ranch	Wheeler	3,838
ı	C. P. R. R	278
ı Junction, with S. P. R. R.	C. P. R. R	280
Island	U. S. C. & G. S	28
e Spring	Wheeler	1,435
e Springs	Wheeler	4,115
e Station	Wheeler	1,744
e Wells	Wheeler	2,080
Vine Peak	Wheeler	8,528
Vine Ranch	Wheeler	2,247
Vine Spring	Wheeler	2,432
Lake	Wheeler	8,564
Valley		2,090
)	Nev. Co. N. G. R. R	2,454
Range	Wheeler	2,987
Ranch	Wheeler	307
)	Wheeler	1,100
Bluff	U. S. C. & G. S	486
Mountain	Wheeler	1,351
)	Wheeler	1,352
s Ranch	Wheeler	4,479
rille	Wheeler	3,544
y	Toner	97
r's Ranch	Wheeler	473
r Giant, Mariposa Grove	Wheeler	5,838
r Hill	Wheeler (Theod)	5,709
r Peak	Wheeler	11,723
)	Wheeler	10,369
and	Wheeler	2,828
s	Wheeler	5,864
s'	Wheeler	1,807
	Wheeler	2,739
ay house	Wheeler	3,359
an Spring	Wheeler	3,272
ton Mountain	Whitney	4,440
ton (near)	Pacific R. R. Reports	260
r's	Wheeler	3,396
ess Mountain, near Big Meadows	Wheeler (Theod)	8,875
' Ranch, Madeline Plains	Wheeler	5,339
' Station, Amander Road	Wheeler	5,439
Ranch	Wheeler	242
ll's Peak	Wheeler	8,126
ountain	Wheeler	7,676
ıtown Crossing	S. & P. R. R	85
ıh Town	Wheeler	3,150
Station	Wheeler	5,957
Green	Wheeler	5,550
on Peak	Wheeler	2,960

Station.	Authority.	Elevation.
		Feet.
Hazel Valley	Wheeler	3,404
Helena, Mount	Whitney	4,343
Henness Pass	C. P. R. R. Surveys	7,031
Do	Whitney	6,996
Hennessy's Bridge	Wheeler	1,821
Henry, Mount	Whitney	2,398
Hermit Valley	Wheeler	7,039
Hickman's Ranch	Wheeler	1,907
High Bluff	U. S. C. & G. S.	533
High Hill	U. S. C. & G. S	490
Highland Peak	Wheeler	10,956
Hill's Ranch	Pacific R. R. Reports	4,131
Hite's Cove	Wheeler	1,601
Hodgdon's	Wheeler	4,506
Hoffmann Peak	Wheeler	10,872
Hogle	C. P. R. R	76
Hollister	Toner	284
Homestead	S. & P. R. R	32
Honey Lake	Wheeler	3,949
Hooker		543
Hope Valley	Williamson	7,072
Hornitos Hotel	Wheeler	847
Horn Spring	Wheeler	5,477
Horsley's Station	Wheeler	3,860
Hosselkus' Ranch	Wheeler	3,635
Hotchkiss Ranch	Wheeler	2,931
Hot Springs	Wheeler	6,080
Do	Wheeler	7,384
Do	Wheeler	7,692
Hough's Mountain	Wheeler (Theod)	7,391
Hovely's Camp	Wheeler	3,860
Hubertville	Toner	980
Hughes' Ranch	Wheeler	3,122
Humboldt, Fort	Med. Dept., U. S. A	50
Humbug Park	Wheeler	4,847
Humpahyamup Pass	P. R. R. Reports	5,351
Hunter's Ranch	Wheeler	6,274
Do	Wheeler	6,275
Huntington, Mohave River	Wheeler	2,699
Hupps' Mill	Wheeler	2,667
Hyde's Union Saw-Mill	Wheeler	5,288
Illinois Ranch	Wheeler	1,759
Illinoistown	Toner	2,234
Independence, Camp	Wheeler	3,957
Do	Smithsonian Inst	4,800
Indian Gulch	Wheeler	951
Indian Valley	Toner	3,280
Indian Wells	C. P. R. R	20
Do	Wheeler	2,608
Ingalls, Mount	Wheeler	8,471
Inskip Toll-gate	Wheeler	4,808
Ione	C. P. R. R	287
Ivanpah	Wheeler	4,238
Jackson	Toner	934
Jacksonville	Wheeler	602
Jelly's Ranch	Wheeler	360
Joe's Peak	Wheeler	9,712
John's, Mount	Petermann	8,000
Johnson's Pass	Goddard	6,752
Do	C. P. R. R. Surveys	7,374
Do	Simpson	7,229
Do	Whitney	7,339

Station.	Authority.	Elevation.
		Feet.
ch	Wheeler	3,460
ch, Bresser Creek	Wheeler	5,643
	Med. Dep., U. S. A	2,570
ar Dutch Flat		3,416
e	Wheeler	3,562
se, on Reno and Susanville		
eckwith's Pass	Wheeler	4,639
Oregon Branch	C. P. R. R	163
	Whitney	14,000
'illow Creek	Wheeler	5,757
	Pacific R. R. Reports	398
	Wheeler	2,551
eak	Wheeler	7,843
se	Wheeler	1,093
		2,558
	Wheeler	1,589
h	Wheeler	1,771
, Death Valley	Wheeler	—225
	Petermann	1,118
	Wheeler	7,677
Bridge	Wheeler	180
ing	C. P. R. R	43
	Nev. Co. N. G. R. R	2,857
	Wheeler	16
	Wheeler	222
	Wheeler	4,624
	Wheeler	7,035
	Wheeler	4,851
nch	Wheeler	129
a Spring	Wheeler	8,558
	Wheeler	6,491
g, Mojave River	Wheeler	2,819
tanch	Wheeler	563
	Wheeler	10,437
	Whitney	10,577
ion, with Visalia Division	C. P. R. R	26
	S. P. R. R	782
ion	Wheeler	446
	Toner	66
	Wheeler	3,409
	Wheeler	7,242
	Wheeler	966
near Loyalton	Wheeler	4,949
	Wheeler	3,756
	Wheeler	3,647
iff	U. S. C. & G. S	495
	C. P. R. R	161
	Wheeler	1,693
	Wheeler	6,442
	C. P. R. R	485
	Whitney	686
ling, Colorado River	Wheeler	606
	U. S. C. & G. S	326
	U. S. C. & G. S	378
	C. P. R. R	55
	Wheeler	3,848
	Wheeler	3,810
	Wheeler (Theod.)	4,309
	Wheeler	4,214
tain	Wheeler	9,670
	Wheeler	4,357
	Wheeler	3,248
	C. P. R. R	265

Station.	Authority.	Elevati
		F
Los Angeles	Wheeler	
Do	Pacific R. R. Reports	
Do ..... San Pedro Dessa	L. A. & I. R. R	
Do ..... Signal Station	U. S. Signal Office	
Los Encinos Ranch	Wheeler	
Los Pozos Ranch	Wheeler	
Los Toros	Wheeler	
Lott's Diggins	Wheeler	6,
Luther's Pass	Goddard	7,
Do	Simpson	7,
Lyell, Mt	Wheeler	13,
Do	Whitney	13,
Lyon's Ranch	Wheeler	1,
McBride's	Wheeler	5,
McBride's Peak	Wheeler	13,
McConnahas'	Wheeler	3,
McCumber's Mill	Pacific R. R. Reports	3,
McDonald Peak	Wheeler	7,
McDonald Ranch	Wheeler	5,
McGill, Mt	Wheeler (Theod.)	9,
McKesick's Peak	Wheeler	7,
McKesick's Ranch	Wheeler	4
McQuade's	Wheeler	1
Macon	Toner	
Madeline Hat Peak	Wheeler	7,
Madeline Pass	P. R. R. Reports	5
Malaga	Wheeler	2
Mapes	Wheeler	5
Mare Island, N. E	U. S. C. & G. S	
Mare Island, N. W	U. S. C. & G. S	
Mare Island	U. S. C. & G. S	
Marin Island	U. S. C. & G. S	
Marion	U. S. C. & G. S	
Mariposa	Wheeler	1,
Do ... Town Hall	Wheeler	1,
Do ... post-office	Wheeler	1,
Mariposa Peak	Whitney	3,
Markleeville	Wheeler	5,
Marlett's Lake	Wheeler	7,
Marlett's Peak	Wheeler	8,
Marlett's Ranch	Wheeler	8,
Marl Spring	Pacific R. R. Reports	3,
Martinez East	U. S. C. & G. S	
Martinez C. H	U. S. C. & G. S	
Martin's	Monterey R. R	
Do	Monterey R. R	-1,
Martin's Ranch	Wheeler	2,
Marysville	C. P. R. R	
Do	Smithsonian Inst	
Master's Hill	U. S. C. & G. S	2,
Matthews' Ranch	Wheeler	6,
Maturango, Mt	Wheeler (Theod.)	8,
Mayfield	Toner	
Mayhews	S. & P. R. R	
Meade, Mt	Wheeler	10,
Meadow Mountain	Wheeler	11,
Meadow Valley	Wheeler	3,
Melrose	C. P. R. R	
Menatchey Valley	Wheeler	9,
Merced	C. P. R. R	
Merced Falls	Wheeler	
Merced, Mt	Wheeler	11,

Station.	Authority.	Elevation.
		Feet.
.....	C. P. R. R.	54
.....	Wheeler	2,010
.....	.....	3,674
ırprise Valley	Wheeler	4,551
.....	C. P. R. R.	356
›ra road	Wheeler	7,076
.....	Med. Dept., U. S. A.	402
.....	Wheeler	4,055
Flume & Trading Co	Wheeler	4,499
.....	Wheeler	376
.....	Wheeler	5,845
.....	Toner	1,121
ı	Wheeler	4,285
.....	Wheeler	2,791
.....	C. P. R. R.	93
.....	C. P. R. R.	2,751
.....	Toner	5,523
.....	Wheeler	9,467
.....	U. S. C. & G. S.	169
.....	U. S. C. & G. S.	133
.....	U. S. Geol. Survey	6,730
.....	Whitney	10,765
.....	Toner	354
.....	Whitney	3,856
.....	Monterey R. R.	7
.....	Med. Dept., U. S. A.	140
y	Wheeler	5,433
ll	Smithsonian Inst	1,502
.....	Wheeler	3,984
.....	Wheeler	1,630
.....	Monterey R. R.	15
.....	Toner	1,500
.....	Wheeler	2,065
;	Wheeler	2,010
›	Wheeler	5,641
andor road	Wheeler	5,973
.....	Wheeler	4,671
.....	U. S. C. & G. S.	2,703
, Lake Tenaiya	Wheeler	7,971
g Village	Wheeler	2,195
, Buffalo Salt Works	Wheeler	3,845
.....	Wheeler	7,434
.....	Wheeler	3,759
ı	Wheeler	2,394
.....	C. P. R. R.	18
.....	C. P. R. R.	8
Adalante)	C. P. R. R.	76
.....	Wheeler	4,431
.....	Toner	125
.....	Nev. Co. N. G. R. R.	2,531
.....	Wheeler	3,375
.....	Wheeler	830
.....	C. P. R. R.	956
.....	C. P. R. R.	1,152
ı	Wheeler	974
.....	P. R. R. Reports	3,164
.....	Wheeler	1,143
Sonora road	Wheeler	6,690
.....	Pacific R. R. Reports	289
.....	Wheeler	6,262
ı San José Branch	C. P. R. R.	88
.....	Wheeler	2,451
.....	Wheeler	5,963

Station.	Authority.	Elevation.
		Feet.
Los Angeles	Wheeler	326
Do	Pacific R. R. Reports	250
Do ..... San Pedro Dessa	L. A. & I. R. R	260
Do ..... Signal Station	U. S. Signal Office	350
Los Encinos Ranch	Wheeler	772
Los Pozos Ranch	Wheeler	259
Los Toros	Wheeler	203
Lott's Diggins	Wheeler	6,310
Luther's Pass	Goddard	7,185
Do	Simpson	7,505
Lyell, Mt	Wheeler	13,190
Do	Whitney	13,217
Lyon's Ranch	Wheeler	1,397
McBride's	Wheeler	5,561
McBride's Peak	Wheeler	13,441
McConnahas'	Wheeler	3,981
McCumber's Mill	Pacific R. R. Reports	3,491
McDonald Peak	Wheeler	7,954
McDonald Ranch	Wheeler	5,297
McGill, Mt	Wheeler (Theod.)	9,214
McKesick's Peak	Wheeler	7,083
McKesick's Ranch	Wheeler	4,469
McQuade's	Wheeler	1,888
Macon	Toner	450
Madeline Hat Peak	Wheeler	7,676
Madeline Pass	P. R. R. Reports	5,667
Malaga	Wheeler	2,320
Mapes	Wheeler	5,039
Mare Island, N. E	U. S. C. & G. S	283
Mare Island, N. W	U. S. C. & G. S	101
Mare Island	U. S. C. & G. S	29
Marin Island	U. S. C. & G. S	74
Marion	U. S. C. & G. S	74
Mariposa	Wheeler	1,962
Do ... Town Hall	Wheeler	1,971
Do ... post-office	Wheeler	1,942
Mariposa Peak	Whitney	3,700
Markleeville	Wheeler	5,525
Marlett's Lake	Wheeler	7,750
Marlett's Peak	Wheeler	8,631
Marlett's Ranch	Wheeler	8,074
Marl Spring	Pacific R. R. Reports	3,793
Martinez East	U. S. C. & G. S	187
Martinez C. H	U. S. C. & G. S	27
Martin's	Monterey R. R	16
Do	Monterey R. R	1,982
Martin's Ranch	Wheeler	2,035
Marysville	C. P. R. R	67
Do	Smithsonian Inst	80
Master's Hill	U. S. C. & G. S	2,445
Matthews' Ranch	Wheeler	6,294
Maturango, Mt	Wheeler (Theod.)	8,844
Mayfield	Toner	34
Mayhews	S. & P. R. R	58
Meade, Mt	Wheeler	10,540
Meadow Mountain	Wheeler	11,734
Meadow Valley	Wheeler	3,757
Melrose	C. P. R. R	18
Menatchey Valley	Wheeler	9,503
Merced	C. P. R. R	173
Merced Falls	Wheeler	360
Merced, Mt	Wheeler	11,413

Station.	Authority.	Elevation.
		Feet.
.....	Williamson	1,965
ost-office	Wheeler	1,893
.....	Toner	209
.....	C. P. R. R	353
ley	Wheeler	2,405
ks	Wheeler	2,542
at	Wheeler	7,749
.....	Wheeler	1,028
.....	Wheeler	4,394
.....	Wheeler	2,558
.....	Wheeler	2,104
anch	Wheeler	973
East End	U. S. C. & G. S	19
West End	U. S. C. & G. S	129
ıntain	Wheeler	10,127
.....	Wheeler	3,381
o	Toner	1,084
t	Wheeler	2,606
'hino y de Jurupa	Med. Dept. U. S. A	1,000
.....	C. P. R. R	2,347
ap	Wheeler	1,556
.....	Wheeler	228
.....	U. S. C. & G. S	474
t	Pacific R. R. Reports	596
.....	Pacific R. R. Reports	675
.....	Pacific R. R. Reports	674
.....	Med. Dept. U. S. A	518
.....	Wheeler	307
.....	Williamson	370
.....	C. P. R. R	308
;nal Station	U. S. Sig. Office	324
.....	C. P. R. R	556
ion	U. S. C. & G. S	188
ıch	Wheeler	1,181
ıtion	Wheeler	2,394
ak	Whitney	13,400
y	Toner	10
on	Wheeler	1,477
use	Wheeler	1,013
Concord Valley	Wheeler	202
rry	Wheeler	543
.....	P. R. R. Reports	4,014
.....	U. S. C. & G. S	1,116
;int	U. S. C. & G. S	192
.....	Toner	2,050
ain	Petermann	7,500
ıh	Wheeler	4,345
:y	Wheeler	184
.....	Wheeler	819
.....	Toner	179
.....	C. P. R. R	249
.....	Pacific R. R. Reports	4,898
l	U. S. C. & G. S	157
ı	P. R. R. Reports	4,181
.....	Wheeler	3,545
in	U. S. C. & G. S	2,205
.....	S. P. R. R	72
anch	Wheeler	6,222
.....	C. P. R. R	168
lls	Toner	312
.....	C. P. R. R	30
.....	Smithsonian Inst	82
.....	Williamson	81

Station.	Authority.	Elevat
		F
Noble's Pass	Williamson	6,
Noman's Spring	Wheeler	3,
Nora	C. P. R. R	
Nordhoff	Wheeler	
North Dome (above valley 3,633)	Wheeler	7,
North End Peak	Wheeler	8,
Northups (Excelsior Hotel)	U. S. C. & G. S	4,
Norwalk	C. P. R. R	
Nott's Ranch	Wheeler	7,
Null's Ranch	Wheeler	1,
Oakdale	Wheeler	
Oak Knoll	C. P. R. R	
Oakland	C. P. R. R	
Oakland Wharf	C. P. R. R	
Observation Peak	Wheeler	8,
Ogburn's Ranch	Wheeler (Theod.)	2,
Olancha Peak	Wheeler	12,
Old Bony Mountain	Wheeler	1,
Old Kimshew Settlement	Wheeler	4,
Omjumi, Mountain	Whitney	8,
Do	Wheeler	8,
Orange	C. P. R. R	
Oroville	Wheeler	
Oso Meadows	Wheeler	5,
Oso Mountain	Whitney	3,
Owen's River Bridge	Wheeler	3,
Pacheco	U. S. C. & G. S	
Pacheco Pass	Whitney	1,
Pacheco's Peak	Whitney	2,
Pacific House	Wheeler	3,
Pah Ute Mines	Wheeler	6,
Pah Ute Peak	Wheeler	8,
Pah Ute Springs	Wheeler	2,
Pajaro	Toner	
Paleta Peak	Wheeler	4,
Palmer's Ranch	Wheeler	2,
Pampa	Wheeler	
Panamint	Wheeler	6,
Panamint Station	Wheeler	3,
Panoche Pass	Whitney	2,
Panola	Toner	
Paradise	Toner	
Paris	C. P. R. R	
Park	L. A. & I. R. R	
Parker's Ranch	Wheeler	4,
Parrott's (formerly Pandola) Ferry	Wheeler	
Peach Spring	Wheeler	5,
Peddler's Hill	Wheeler	6,
Peña Blanca (Haigh's Ranch)	Wheeler	1,
Peninsula Hill	U. S. C. & G. S	
Penolo, Point	U. S. C. & G. S	
Penryn	Toner	
Perkins	S. P. R. R	
Petalume Creek	U. S. C. & G. S	
Phillips Ranch	Wheeler	6,
Phillips Ranch	Wheeler	
Phillips Station	Wheeler	6,
Pilot Knob	Wheeler	5,
Pilot Peak	Whitney	7,
Pinos Mountain	Petermann	9,
Pinto Rock	Wheeler	3,
Piute Pass	K. P. R. R. surveys	2,
Placerville	Toner	2,

Station.	Authority.	Elevation.
		Feet.
Barbara	Smithsonian Inst	20
Buena Ventura	Wheeler	146
Catalene	Toner	3,000
Clara	Smithsonian Inst	98
Cruz Station	U. S. C. & G. S	359
Cruz Point	U. S. C. & G. S	32
Isabella		3,050
Isabella Rancho	Pacific R. R. Reports	2,957
Monica	L. A. & I. R. R	20
)	Wheeler	15
Paula	Wheeler	384
Rosa Valley	Wheeler	175
ncente	L. A. & I. R. R	167
ii-to Spring	Wheeler	5,553
ers, Mount	Wheeler	6,864
House	S. P. R. R	109
z, Mount	Wheeler	2,275
's Ranch	Wheeler	2,716
Pass	P. R. R. Reports	1,577
el Dome (above valley 4,160)	Wheeler	8,011
	Toner	229
apol Flat	Wheeler	2,210
Palms	C. P. R. R	1,126
's Station	Wheeler	4,026
		1,160
, Mount	Whitney	14,442
, Mount (timber line on)		8,000
s Flat	Toner	2,270
)	Wheeler	2,036
s Ranch	Wheeler	6,311
s Bridge	Wheeler	2,007
Head	Wheeler	3,914
r's Hot Springs	Wheeler	4,094
an		113
e Springs	S. P. R. R	1,427
s Ranch	Wheeler	5,040
ly Bridge	Wheeler	3,071
way's Ranch	Wheeler	5,067
Valley	Wheeler	4,910
ville, Junc. of S. T. & L. Road	Wheeler	4,904
) Post-office	Wheeler	4,880
an, Mt	Whitney	11,623
Creek	Toner	3,700
Lake Hotel	Wheeler	7,174
Mt	Whitney	10,934
Mountain City	Wheeler	6,446
Mountain Pass	Whitney	8,793
ranch	Wheeler	674
s Ranch	Wheeler	1,047
Creek Depot	Wheeler	4,163
ng Post-office	Wheeler	252
's Store	Wheeler	4,925
s Hotel	Wheeler	5,217
Spring	Wheeler	706
Lake	Pacific R. R. Reports	1,002
)	Wheeler	1,128
d City	Wheeler	2,513
d Pass	A. & P. R. R. surveys	3,215
ara	Wheeler	5,908
a Mountain	U. S. C. & G. S	2,292
Mountain	Wheeler	11,478
Pass	P. R. R. Reports	10,115
a post-office	Wheeler	1,816
	Toner	186

Station.	Authority.	Elevati
		F
Sacramento Signal Station	U. S. Signal Office	
Saddle (Malaga) Mountain	Wheeler	2,
Saint Clair Ranch	Wheeler	1,
Saint Helena	C. P. R. R	
Salinas City		
Salsbury	S. P. R. R	
Salt Wells	Wheeler	
San Andreas	Wheeler	1,
San Antonio Peak	U. S. C. & G. S	9,
Do	Wheeler	10,
San Benito	Smithsonian Inst	
San Benito Pass	K. P. R. R. Surveys	2,
San Bernardino	Wheeler	
San Bernardino Mountain	Whitney	11,
San Bernardo	Pacific R. R. Reports	1,
San Bruno	Toner	
San Buenaventura	Toner	
San Carlos Peak	Whitney	4,
Sand Creek	C. P. R. R	2,
Sand Knoll	U. S. C. & G. S	
San Diego	Emory	
Do...Mission	Pacific R. R. Reports	
Do...Signal Station	U. S. Signal Office	
San Emigdio Store	Wheeler	
San Fernando	C. P. R. R	1,
Do	Wheeler	1,
San Fernando Pass	Pacific R. R. Reports	1,
San Fernando Peak	Wheeler	3,
San Fernando Tunnel, south mouth	Wheeler	1,
San Felipe	Pacific R. R. Reports	2,
Do	Pacific R. R. Reports	2,
San Francisco, Signal Station	U. S. Signal Office	
Do .....Presidio	Med. Dept. U. S. A	
Do	U. S. C. & G. S	
San Francisquito Cañon	Wheeler	2,
San Francisquito Pass	P. R. R. Reports	3,
San Gabriel	Wheeler	
Do .....Church	Wheeler	
San Gabriel Mine	Wheeler	1,
San Gabriel Peak		6,
San Gabriel Range	Whitney	4,500 to 6,
San Gorgonio	C. P. R. R	2,
San Gorgonio Pass	P. R. R. Reports	2,
Do	T. & P. R. R	2,
San Isabel Rancho	Toner	2,
San Jacinto Mountain	Wheeler	10,
San Jose	C. P. R. R	
Do	U. S. C. & G. S	
San Leandro	C. P. R. R	
San Lorenzo	Toner	
San Luis Obispo	Toner	
San Luis Pass	P. R. R. Reports	1,
San Luis Rey	Med. Dept. U. S. A	
San Mateo	Toner	
San Miguel	Toner	
San Pablo Point	U. S. C. & G. S	
San Pascual	Emory	
San Pedro	Pacific R. R. Reports	
San Pedro Point	U. S. C. & G. S	
San Pedro Hill	Wheeler	1,
San Quentin, Point	U. S. C. & G. S	
Santa Ana	U. S. C. & G. S	3,
Do	C. P. R. R	
Santa Ana Hotel	Wheeler	

Station.	Authority.	Elevation.
		Feet.
›son	C. P. R. R	9
›son's	Wheeler	2,114
›son's Ferry	Wheeler	188
›son's Peak	Wheeler	7,752
er Mountain	Wheeler	9,121
s Ranch	Wheeler	2,609
	C. P. R. R.	267
Santos Pass	P. R. R. Reports	637
›ha Peak	Wheeler	7,022
es Bay	U. S. C. & G. S.	673
l Rock	U. S. C. & G. S.	81
r's, Napa Valley		369
Talk	Nev. Co. N. G. R. R.	2,774
ly Spring	Wheeler	7,989
›era	Wheeler	7,567
ad		5,820
Meadows	Wheeler	5,998
se	C. P. R. R	5,819
›	Wheeler	5,795
se Pass	P. R. R. Reports	7,200
›dy	C. P. R. R	88
	C. P. R. R.	282
› Lake	Pacific R. R. Reports	398
lat	Wheeler	5,594
k	Toner	106
nne Grove	Wheeler	5,794
r's Ranch, Sierra Valley	Wheeler	4,904
town	Wheeler	1,321
Lake	Wheeler	5,106
Peak	Wheeler	8,824
Peaks	Whitney	8,925
s Ranch	Wheeler	1,121
› Ranch	Wheeler	4,802
Ranch	Wheeler	2,662
Camp	Smithsonian Inst	54
Hill	Nev. Co. N. G. R. R.	2,706
ille	Toner	175
Citron	Emory	1,539
ito	Toner	1,643
› ..Post-Office	Wheeler	1,748
	U. S. C. & G. S	87
›	U. S. C. & G. S	371
› (North)	C. P. R. R	26
› (South)	C. P. R. R	13
›nes Ranch	Wheeler	940
		211
›	Williamson	384
›, Signal Station	U. S. Signal Office	348
›o	Wheeler	2,075
›r Lake House	Wheeler	6,808
›' Meadows	Wheeler	4,567
›' Peak	Wheeler	7,153
nyhe Mountain	Wheeler (Theod.)	8,527
›r's Pass	P. R. R. Reports	5,302
›o	Wheeler	5,322
ce's Ranch, Warner Lake	Wheeler	4,487
›t Grove	C. P. R. R	308
› Springs	C. P. R. R	46
› Springs, Sonora Road	Wheeler	7,385
er's Pass	P. R. R. Reports	3,870
er's Ranch	P. R. R. Reports	3,022
›n's Peak	Wheeler	9,668
ington, Mount	Wheeler	10,802
ington Quartz Mill	Wheeler	1,032

Station.	Authority.	Elevation.
		Feet.
South Dome (lip) (above valley 4,953)	Wheeler	8,804
South Fork Mountain	Wheeler	7,408
Spadra	C. P. R. R	705
Do	Wheeler	802
Spanish Ranch	Wheeler	3,636
Sprague's Ranch	Wheeler	2,950
Springville	Wheeler	48
Stanford Mountain	Whitney	9,175
Starr King, Mt. (above valley 5,171)	Wheeler	9,022
State Line Peak	Wheeler	8,405
Stevens Bar Ferry	Wheeler	614
Stevens Mountain	Wheeler	10,011
Stevens Ranch, Hope Valley	Wheeler	7,382
Stockton, Junc. with S. & V. & S. & C. R. R's.	C. P. R. R	23
Stockton's Cabin	Wheeler	5,877
Stockton Mill	Wheeler	4,639
Stokes Mountain	Wheeler	2,069
Stonebreakers	Wheeler	4,360
Stony Point		500
Storms	Nev. Co. N. G. R. R	2,424
Strawberry	Wheeler	5,238
Strawberry Station (toll-house)	Wheeler	5,695
Strawberry Valley	Toner	3,567
Do	Williamson	5,707
Sugar Loaf Mountain	Wheeler	8,416
Sulphur Peak	U. S. C. & G. S.	3,471
Sulphur Spring Ranch	Wheeler	4,466
Summit Peak	Wheeler	8,301
Summit Post-office, west of Beckwith's Pass	Wheeler	4,875
Summit Station	Wheeler	6,983
Summit Valley	Toner	6,765
Sumner	C. P. R. R	415
Sunday Peak	Wheeler	8,335
Do	Wheeler	11,089
Sunoe	Toner	264
Surveyors' Wells	Wheeler	3,567
Susanville	Wheeler	4,195
Suspension Bridge, Mokelumne River	Wheeler	2,092
Sutler	Toner	919
Swanns' Ranch, E. Walker River	Wheeler	5,042
Sweetwater Mountain	Wheeler	11,778
Sycamore		302
Sycamore Grove	Wheeler	447
Tahoe City	Wheeler	6,252
Tahoe Lake	R. R. Reports	6,247
Tamalpais, Mount	Whitney	2,597
Tamarac		6,209
Tamarack Flat	Wheeler	6,234
Tannery	Wheeler	4,400
Tapo Ranch	Wheeler	1,373
Tassett		83
Taylor's Ranch	Wheeler	1,047
Taylorville	Wheeler	3,479
Tehachapai, Mount	Wheeler (Theod.)	9,214
Tehachapai Pass	Wheeler	3,832
Tehama	C. P. R. R	222
Tejon, Fort	Med. Dept. U. S. A	3,240
Do	Wheeler	3,245
Tejon Pass	P. R. R. Reports	5,364
Tejon Ranch	Wheeler	1,450
Telegraph Hill	U. S. C. & G. S	300
Telescope Mountain	Wheeler (Theod.)	10,937
Temescal Mountain	Wheeler (Theod.)	5,730
Thomas Ranch	Wheeler	3,772

Station.	Authority.	Elevation.
		Feet.
Thompson	C. P. R. R.	9
Thompson's	Wheeler	2,114
Thompson's Ferry	Wheeler	188
Thompson's Peak	Wheeler	7,752
Thunder Mountain	Wheeler	9,121
Tilley's Ranch	Wheeler	2,609
Tipton	C. P. R. R.	267
Todos Santos Pass	P. R. R. Reports	637
Toolucha Peak	Wheeler	7,022
Tomales Bay	U. S. C. & G. S.	673
Topsail Rock	U. S. C. & G. S.	81
Towler's, Napa Valley		369
Town Talk	Nev. Co. N. G. R. R.	2,774
Tragedy Spring	Wheeler	7,989
Trinchera	Wheeler	7,567
Trinidad		5,820
Trout Meadows	Wheeler	5,998
Truckee	C. P. R. R.	5,819
Do	Wheeler	5,795
Truckee Pass	P. R. R. Reports	7,200
Truebody	C. P. R. R.	88
Tulare	C. P. R. R.	282
Tulare Lake	Pacific R. R. Reports	398
Tull Flat	Wheeler	5,594
Tullock	Toner	106
Tuolumne Grove	Wheeler	5,794
Turner's Ranch, Sierra Valley	Wheeler	4,904
Tuttletown	Wheeler	1,321
Twin Lake	Wheeler	5,106
Twin Peak	Wheeler	8,824
Twin Peaks	Whitney	8,925
Twist's Ranch	Wheeler	1,121
Tyler's Ranch	Wheeler	4,802
Uhl's Ranch	Wheeler	2,662
Union Camp	Smithsonian Inst	54
Union Hill	Nev. Co. N. G. R. R.	2,706
Vacaville	Toner	175
Valla Citron	Emory	1,539
Vallecito	Toner	1,643
Do .. Post-Office	Wheeler	1,748
Valejo	U. S. C. & G. S	87
Do	U. S. C. & G. S	371
Vallejo (North)	C. P. R. R.	26
Vallejo (South)	C. P. R. R.	13
Vergennes Ranch	Wheeler	940
Vina		211
Visalia	Williamson	384
Visalia, Signal Station	U. S. Signal Office	348
Volcano	Wheeler	2,075
Wabler Lake House	Wheeler	6,808
Wades' Meadows	Wheeler	4,567
Wades' Peak	Wheeler	7,153
Wahguyhe Mountain	Wheeler (Theod.)	8,527
Walker's Pass	P. R. R. Reports	5,302
Do	Wheeler	5,322
Wallace's Ranch, Warner Lake	Wheeler	4,487
Walnut Grove	C. P. R. R.	308
Warm Springs	C. P. R. R.	46
Warm Springs, Sonora Road	Wheeler	7,385
Warner's Pass	P. R. R. Reports	3,870
Warner's Ranch	P. R. R. Reports	3,022
Warren's Peak	Wheeler	9,668
Washington, Mount	Wheeler	10,802
Washington Quartz Mill	Wheeler	1,032

Station.	Authority.	Elevation.
		Feet.
Watsonville		45
Waucoba Peak	Wheeler	11,267
Webster	C. P. R. R.	24
Welden	Wheeler	2,668
Welds	Wheeler	2,217
Wellington Mountain	Wheeler	7,665
West Point	Wheeler	2,749
West's Ranch	Wheeler	596
Wheatland	C. P. R. R.	84
White Granite Mountain	Wheeler	7,045
White Rock	S. P. R. R.	495
Whitney	Wheeler	10,051
Whitney Meadows	Wheeler	9,371
Whitney, Mt	Whitney	14,898
Wellington Mountain	Wheeler	7,665
Wild Rose Spring	Wheeler	4,683
Wiley's Station, Amador Road	Wheeler	5,027
Williamson River	Wheeler	4,387
Williamson's Lake		2,588
Willow Lake	Wheeler	5,382
Willow Ranch	Wheeler	4,275
Willow Spring	Wheeler	420
Willow Spring (Head of Willow Creek)	Wheeler	5,084
Willow Tree Spring	Wheeler	2,500
Wilson's Ranch	Wheeler	1,115
Woodford's	Wheeler	5,676
Woodland, Junction with N. R. R	C. P. R. R.	63
Do	U. S. C. & G. S	58
Woods Peak	Whitney	10,552
Workman's Hill	Wheeler	1,363
Workman's Ranch	Wheeler	362
Wright Lake	P. R. R. Reports	4,470
Yallowbally	Petermann	8,000
Yankee Jim's		3,185
Yerba Buena	U. S. C. & G. S	345
Yosemite Valley	Whitney	4,060
Yosemite Valley (cliffs and domes about it range from 7,000 to 9,900 feet above sea)	Williamson	3,935
You Bet	Nev. Co. N. G. R. R	2,172
Yountville	C. P. R. R	97
Do	Cal. P. R. R	105
Yreka	Williamson	2,731
Yreka Gap	Whitney	6,642

COLORADO.

Station.	Authority.	Elevation.
		Feet.
Abeyta Pass	Hayden	9,300
Do	D. & R. G. R. R	9,399
Acequia	D. & R. G. R. R	5,508
Ada Spring	King	9,279
Æolus, Mount	Hayden	14,054
Do	Wheeler	14,211
Agate	K. P. R. R	5,458
Agency Knob	Wheeler	12,274
Akron	R. V. & B. & C. R. R	4,656
Alamosa, San Juan Junc	D. & R. G. R. R	7,524
Alden's Junction	Wheeler	8,981
Alder's Junction	Wheeler	8,905
Alicante	D. & R. G. R. R	11,148
Alkaline Station	Wheeler	4,136
Allen's	D. & R. R. R. G	9,428
Allen's Park	Hayden	8,513
Alma	Wheeler	10,254
Altar Peak	Wheeler	13,254
Americus	D. & R. G. R. R	8,118
Anderson's Ranch	Wheeler	4,249
Animas City	D. & R. G. R. R	6,532
Do	Wheeler	6,622
Anita Peak	King	10,061
Antelope Park	Hayden	6,433
Antelope Pass	R. R. Surveys	8,050
Antero, Mount	Wheeler	13,853
Do	Hayden	14,245
Antonita	D. & R. G. R. R	7,866
Apache	D. & R. G. R. R	5,917
Apishapa	D. & R. G. R. R	6,137
Arapahoe	K. & P. R. R	4,006
Arapahoe Peak	Hayden	13,520
Do.....Timber line on	Hayden	11,100
Arboles	D. & R. G. R. R	5,991
Argentine Pass	Wheeler	13,286
Argo	C. C. R. R	5,214
Arkansas Bridge	Wheeler	7,741
Arkansas, Mount	Hayden	13,647
Arkansas Pass	Wheeler	11,445
Aroyo	K. P. R. R	4,648
Arvada	C. C. R. R	5,322
Athal Divide	D. P. R. R	6,301
Audubon, Mount, Timber line on	Hayden	11,325
Badger	D. & R. G. R. R	6,743
Badito	Wheeler	6,387
Do	Ruffner	6,530
Baker's Mine	Whitney	11,956
Bakersville	Hayden	9,753
Do	G. L. & S. J. R. R	9,676
Bald Mountain	Hayden	11,493
Do.....Timber line on	Hayden	11,100
Baldy	D. & R. G. R. R	7,592
Baldy Peak	Hayden	14,176
Banded Peak	Wheeler	12,824
Do	Hayden	12,860
Barnes	D. & R. G. R. R	6,207
Basalt Peak	Hayden	11,906

Station.	Authority.	Elevation.
		Feet.
Basalt Peak	Wheeler	11,565
Bear Creek	G. & S. P. R. R	5,547
Bear Creek Pass	Hayden	12,600
Do	Wheeler	11,606
Bear Creek Station	Parry	7,198
Beaver Brook	C. C. R. R	6,391
Beaver Creek	D. & R. G. R. R	4,976
Belden	D. & R. G. R. R	8,346
Belleview Peak	Wheeler	12,673
Do	Hayden	12,350
Bennett	K. P. R. R	5,496
Bent Cañon	Wheeler	4,696
Benton	D. & R. G. R. R	6,941
Bergen Peak	Hayden	9,555
Bergen's Mountain	Hayden	9,773
Bergen's Park	Hayden	7,643
Bergen's Ranch	Parry	7,752
Berthoud Pass	Parry	11,349
Do	U. P. R. R. Surveys	11,350
Bessemer	D. & R. G. R. R	4,751
Big Hill	C. C. R. R	6,823
Big Lake (San Luis Valley)	Wheeler	7,478
Bird's Eye	D. & R. G. R. R	10,161
Bismarck P. O	Wheeler	7,736
Bison Peak	Hayden	12,237
Blackburn	D. & R. G. R. R	7,357
Black Hawk	C. C. R. R	8,031
Do	Whitney	7,543
Blackhead	Hayden	12,514
Blackwell	A. T. & S. F. R. R	3,573
Blair	R. V. & B. O. C. R. R	4,705
Blaine, Mt	Wheeler (Theod)	14,249
Do	Wheeler	13,905
Blanca Peak	Wheeler	14,269
Do	Hayden	14,464
Blodget's Peak	Hayden	9,500
Boon	A. T. & S. F. R. R	4,458
Borst's	D. & R. G. R. R	6,811
Boulder	G. B. & C. R. R	5,308
Do	Parry	5,536
Boulder Pass	Hayden	11,670
Do	V. P. R. R. Surveys	11,900
Boulder Peak	Wheeler	12,417
Boundary Peak	Hayden	12,840
Box Elder	K. P. R. R	5,528
Bradford Junction	Parry	8,069
Brant's Junction	D. & R. G. R. R	9,893
Brazos Peak	Hayden	11,274
Breckenridge	Whitney	9,674
Breckenridge Pass	Wheeler	11,503
Bridgeport	D. & R. G. R. R	4,727
Brighton	D. P. R. R	4,979
Bristol Head	Hayden	12,800
Do	Wheeler (Theod)	12,637
Bross, Mt	Hayden	9,468
Brownville	G. L. & S. J	9,151
Brush	R. V. & B. & C. R. R	4,235
Buck Mountain	King	10,877
Buckskin Mountain	Hayden	14,296
Buena Vista	D. & R. G. R. R	7,948
Do.....S. P. Switch No. 1	D. & R. G. R. R	7,921
Do.....S. P. Switch No. 2	D. & R. G. R. R	7,927
Buffalo, Mount	Wheeler	13,755
Buffalo Peak	Hayden	13,541

Station.	Authority.	Elevation.
		Feet.
Buffalo Peak	Wheeler	13,328
Do.....Timber line on	Hayden	12,041
Buffalo Springs, South Park	Wheeler	8,952
Do	Whitney	8,901
Burlington		4,976
Burnham	D. & R. G. R. R	5,220
Burroughs'	Wheeler	10,878
Butte Valley P. O	Wheeler	5,894
Byers	K. P. R. R	5,203
Byers, Mount	Hayden	12,778
Do.....Timber line on	Hayden	11,400
Cactus	D. & R. G. R. R	4,859
Caddoa	A., T. & S. F. R. R	3,756
Calumet	D. & R. G. R. R	8,849
Cambia	G. & S. P. R. R	5,944
Camel Peak	King	9,158
Cameron's Cone	Hayden	11,460
Cameron, Mount		14,000
Canby, Mount	Hayden	13,274
Do	Wheeler	13,356
Canfield	D. & B. V. R. R	5,048
Cañon City	Wheeler	5,396
Do.....(Old Depot)	D. & R. G. R. R	5,320
Do.....(New Depot)	D. & R. G. R. R	5,322
Do.....(Leadville Junc.)	D. & R. G. R. R	5,313
Do.....(Grape Creek)	D. & R. G. R. R	5,357
Capitol Mountain	Hayden	13,997
Caraccas	D. & R. G. R. R	6,151
Carboneria	D. & R. G. R. R	6,402
Carbon Mountain	Wheeler	12,078
Caribou		9,167
Do. Planters' Hotel	Hayden	9,905
Carlile Springs	D. & R. G. R. R	4,929
Carlton	A., T. & S. F. R. R	3,517
Carr	D. P. R. R	5,696
Carr City	R. V. & B. & C. R. R	4,357
Carr's Cabin, Antelope Park	Wheeler	9,989
Cascade Hill	D. & R. G. R. R	7,763
Case's	D. & R. G. R. R	4,982
Castle Peak	Hayden	14,115
Castle Rock	D. & R. G. R. R	6,198
Catlin	A., T. & S. F. R. R	4,234
Cebolla	D. & R. G. R. R	7,330
Cedar Creek	D. & R. G. R. R	6,728
Cedar Point	K. P. R. R	5,712
Central City	C. C. R. R	8,484
Do	Parry	8,300
Centreville	Wheeler	7,727
Cerro	D. & R. G. R. R	7,942
Chama Peak	Wheeler	12,248
Chandler Creek Junction	D. & R. G. R. R	5,193
Cheyenne Mountain	Hayden	9,948
Cheyenne Wells	K. P. R. R	4,277
Chicago Lake	Hayden	11,500
Chico	A., T. & S. F. R. R	4,530
Chicosa	Wheeler	6,076
Do	D. & R. G. R. R	6,095
Chief	Hayden	11,833
Chimney Gulch	C. C. R. R	5,909
Christlake	Toner	7,186
Cimarron	D. & R. G. R. R	6,874
Cinnamon Mountain	Hayden	12,600
Clark's Peak	King	13,167
Clayton Cone	Hayden	9,560

Station.	Authority.	Elevation.
		Feet.
Clelland	A., T. & S. F. R. R	5,145
Cleora	D. & R. G. R. R	6,993
Cloud City	D. & R. G. R. R	8,940
Coal Creek	D. & R. G. R. R	5,338
Coal Junction	D. & R. G. R. R	6,186
Coal Mountain	King	8,430
Cochetopa	D. & R. G. R. R	7,821
Cochetopa Dome	Wheeler	11,673
Cochetopa or Los Pinos Agency	Wheeler	9,088
Cochetopa Pass	Wheeler	10,032
Do	P. R. R. Reports	10,032
Do	Hayden	10,000
Coffintop	Hayden	8,003
Coke Ovens	D. & R. G. R. R	5,932
Colfax	Wheeler	8,599
Colina	D. & R. G. R. R	6,712
Collins, Fort	Toner	4,815
Colorado City	D. & R. G. R. R	6,092
Do	Parry	6,344
Do	Hayden	6,049
Colorado Springs	Wheeler	6,010
Do ....passenger depot	D. & R. G. R. R	5,970
Do ....Manitou Junction	D. & R. G. R. R	5,967
Do ....freight depot	D. & R. G. R. R	5,960
Do ....signal station	U. S. Signal Office	6,032
Comanche Peak	King	11,929
Conejos	Hayden	7,880
Do	Wheeler	7,435
Conejos Peak	Hayden	13,183
Conical Butte	Hayden	9,848
Corliss Springs		5,985
Corona	R. V. & B. & C. R. R	4,547
Corral Peak	Hayden	11,333
Costilla	Wheeler	7,551
Costilla Pass	Palmer	9,520
Cotopaxi	D. & R. G. R. R	6,364
Cottonwood	C. C. R. R	7,178
Coxo	D. & R. G. R. R	9,731
Cranes Park	D. & R. G. R. R	10,097
Crescent Peak	King	10,255
Crested Butte (Mt.)	Hayden	12,052
Do ....depot	D. & R. G. R. R	8,871
Crested Butte (Irwin Junction)	D. & R. G. R. R	8,853
Crestone	Hayden	14,233
Do	Wheeler	13,190
Crestone, timber line on	Wheeler	12,107
Crooks	D. & R. G. R. R	8,144
Crystal Creek	D. & R. G. R. R	6,869
Crystal Lake	D. & R. G. R. R	9,389
Cub Mountain	Hayden	10,623
Cucamonga Peak	Wheeler	8,529
Cucharas	D. & R. G. R. R	5,921
Cucharas (El Moro) Junction		5,925
Cucharas Pass	Wheeler	9,994
Cuerno Verde Peak	Wheeler	12,341
Culebra Church	Wheeler	8,010
Culebra Peak	Hayden	14,069
Cumbres	D. & R. G. R. R	9,993
Cunningham Pass	Hayden	12,090
Cunningham Pass, Timber line on	Hayden	11,500
Curasse	D. & R. G. R. R	4,493
Curecanti	D. & R. G. R. R	7,052
Currant Creek Pass	Wheeler	9,654
Daly, Mt	Hayden	13,193

Station.	Authority.	Elevation.
		Feet.
Dayton	Hayden	9,441
Do	Wheeler	9,333
Deer Trail	K. P. R. R	5,185
Del Norte	Wheeler	7,743
Do	Hayden	7,750
Do	D. & R. G. R. R	7,858
Del Norte Hill	Wheeler	8,218
Del Norte Peak	Wheeler	13,084
Delta	D. & R. G. R. R	4,947
Denver Union Depot	Mean result of R. R. levels	5,175
Do ..Junction	D. P. R. R	5,184
Do ..signal station	U. S. Signal Office	5,294
Derby	R. V. & B. & C. R. R	5,159
Derby, Mt	Hayden	12,253
Diamond Peak	King	9,925
Dillon (Breckenridge Junction)	D. & R. G. R. R	8,852
Divide	D. & R. G. R. R	7,216
Dominques	D. & R. G. R. R	4,771
Dora	D. & R. G. R. R	7,617
Dodson's Ranch	Wheeler	6,379
Douglas	D. & R. G. R. R	6,303
Doyle	D. & R. G. R. R	8,035
Dugley	D. & S. P. R. R	10,339
Dumont	C. C. R. R	7,924
Dunn's Peak	Wheeler	13,502
Durango, passenger depot	D. & R. G. R. R	6,498
Do ..freight depot	D. & R. G. R. R	6,505
Eagle Park	D. & R. G. R. R	9,205
Do	Hayden	8,440
Eagle River Peak	Hayden	12,648
Earl	A., T. & S. F. R. R	5,671
East Mountain	King	7,588
East River Pass	Hayden	11,163
Eckley	R. V. & B. & C. R. R	3,879
Edgerton	D. & R. G. R. R	6,332
Eighteen-mile Mountain	Wheeler	12,278
Eiler's	D. & R. G. R. R	9,836
Eiler's Junction	D. & R. G. R. R	9,828
Eiler's Smelter Junction	D. & R. G. R. R	9,828
Elbert, Mt	Hayden	14,351
Do...Timber line on	Hayden	11,871
Elk Mountain	Wheeler	13,101
Elk Park	D. & R. G. R. R	8,761
El Laté	Hayden	9,840
El Moro	D. & R. G. R. R	5,857
El Moro Mines	D. & R. G. R. R	6,537
Empire	Parry	8,583
Do	C. C. R. R	8,245
Engineer Mountain	Hayden	12,971
Do	Wheeler	13,277
Englemann, Mt., Timber line on	Hayden	11,578
Erie	D. & B. V. R. R	5,024
Escalante	D. & R. G. R. R	4,814
Ethel Peak	King	11,976
Evans	Hayden	4,745
Do	D. P. R. R	4,646
Do	King	4,775
Evans, Mount	Hayden	14,330
Do	Wheeler	14,321
Do.....Timber line on	Wheeler	11,723
Do.....Timber line on	Hayden	11,300
Excelsior	D. &. R. G. R. R	4,895
Fairplay	Wheeler	10,076
Do	Whitney	9,946

Station.	Authority.	Elevation.
		Feet.
Fairplay	D. & S. P. R. R.	9,941
Fall River	Whitney	7,708
Do	C. C. R. R.	7,665
Farnham's Ranch	Hayden	9,548
Farnum's Peak	Hayden	11,400
First View	K. P. R. R.	4,577
Fish Creek		6,889
Fisher's Peak	Hayden	9,460
Flora, Mount	Parry	12,878
Florida	D. & R. G. R. R.	6,695
Florissant	Wheeler	8,184
Floyd Hill	C. C. R. R.	7,201
Fork's Creek	C. C. R. R.	6,878
Fountain	D. & R. G. R. R.	5,503
France's Coal Mine	Hayden	6,693
Freeman's Peak	Hayden	11,600
French Pass	Wheeler	12,044
Frisco	D. & R. G. R. R.	9,064
Frustrum Mountain	Wheeler	13,893
Galena Mountain	Hayden	13,290
Gardner	Wheeler	6,956
Do	Hayden	7,000
Garland, Fort	Wheeler	7,849
Do	D. & R. G. R. R.	7,914
Do	Hayden	7,996
Do flagstaff	Wheeler, R. R. levels	7,937
Garlick's Ranch	Parry	7,105
Georgetown	C. C. R. R.	8,474
Do	Parry	8,452
Do Astronomical Station	Wheeler	8,587
Do Barton House	Whitney	8,594
Georgia Pass	Wheeler	11,770
Do	Parry	11,487
Do	Hayden	11,811
Gibson Peak	Wheeler	13,729
Girardodt	D. & R. G. R. R.	6,358
Glacier, Mount	Wheeler	14,243
Glacier Peak	Hayden	12,654
Do	Wheeler	13,360
Glade	D. & R. G. R. R.	6,515
Godfrey	K. P. R. R.	5,603
Golden	C. C. R. R.	5,684
Do	Whitney	5,690
Golden Peak	Hayden	9,650
Gold Hill	Hayden	8,463
Do	Parry	8,636
Goodnight	D. & R. G. R. R.	4,708
Gore's Pass	Hayden	9,570
Gothic Mountain	Hayden	12,570
Granada	A. T. & S. F. R. R.	3,436
Grand Junction	D. & R. G. R. R.	4,561
Grand Lake	Hayden	8,153
Grand Mesa	Hayden	10,000
Granite	D. & R. G. R. R.	8,923
Do	Hayden	8,883
Grant	D. & S. P. R. R.	8,491
Do	Hayden	8,587
Do	Wheeler	8,497
Gray's Peak	Hayden	14,341
Do	Whitney	14,319
Do Timber line on	Hayden	11,100
Do	Wheeler	14,380
Gray's Peak, divide between north and south	Wheeler	13,929

Station.	Authority.	Elevation.
		Feet.
Greeley	D. P. R. R	4,642
Do	King	4,779
Greenhorn	D. & R. G. R. R	5,076
Greenhorn Mountain	Hayden	12,230
Greenland	D. & R. G. R. R	6,899
Green Mountain	Hayden	7,993
Greneros	D. & R. G. R. R	5,782
Griffith Mountain	Wheeler	11,589
Do	Hayden	11,273
Grizzly Peak	Hayden	13,956
Grizzly Peak, Timber line on	Hayden	11,758
Gunnison	Hayden	7,743
Do	Wheeler	7,419
Do	D. & R. G. R. R	7,658
Gunnison, Crested Butte Junc	D. & R. G. R. R	7,660
Gunnison, Mt	Hayden	12,688
Do	Wheeler	12,242
Gutchels	D. & R. G. R. R	9,965
Guy Gulch	C. C. R. R	6,212
Guyot, Mount	Hayden	13,565
Do	Parry	13,223
Guyot, Mount, Timber line on	Hayden	11,811
Hague's Peak	King	13,832
Hall's Ranch, San Luis Valley	Wheeler	7,839
Hall's Smelting Works	Wheeler	9,916
Hamilton	Hayden	9,743
Do	Whitney	9,875
Hamilton Pass	Ruffner	12,370
Do .....Timber line on		10,840
Hamilton's Ranch	Wheeler	7,227
Hancock Pass	Wheeler	12,263
Handie's Peak	Hayden	13,997
Do	Wheeler	14,149
Hanz Peak	King	10,906
Hardscrabble Mines		8,800
Harp	D. & R. G. R. R	7,323
Hartzell's Ranch	Wheeler	8,828
Harvard, Mount	Hayden	14,375
Do	Whitney	14,452
Do	Wheeler	14,151
Do .....Timber line on	Hayden	12,117
Hayden Pass	Wheeler	10,780
Haydens	D. & R. G. R. R	9,136
Haydensville		6,382
Hay Station, Deer Range	Wheeler	9,613
Hecla	D. & R. G. R. R	7,349
Helmet Peak	Hayden	12,042
Henderson's Island	D. P. R. R	5,028
Henderson's Ranch	Whitney	8,257
Hepburn's Park	D. & S. P. R. R	8,141
Hereford	D. & R. G. R. R	4,460
Hermano Peak	Hayden	9,014
Hermosa	Wheeler	6,618
Do	D. & R. G. R. R	6,623
Hesperis Mountain	Hayden	13,135
Heyde	R. V. & B. & C. R. R	4,220
Hilton	A., T. & S. F. R. R	3,877
Hoehne's	A., T. & S. F. R. R	5,704
Holley's	A., T. & S. F. R. R	3,377
Holy Cross Mountain	Hayden	14,176
Homer	D. & R. G. R. R	8,935
Homestake Peak	Hayden	13,687
Hoosier Pass	Wheeler	11,627

Station.	Authority.	Elevation.
		Feet.
Hoosier Pass	Whitney	11,546
Do	U. P. R. R. surveys	11,500
Horsefly, Mount	Wheeler	10,504
Horseshoe Mountain	Whitney	13,988
Hot Springs	Parry	7,725
Howard's	D. & R. G. R. R	6,692
Howardville	Hayden	9,700
Do	Wheeler	9,527
Hudson	R. V. & B. & C. R. R	4,993
Huerfano	Wheeler	4,714
Do	D. & R. G. R. R	5,657
Hughes, Astronomical Station	Wheeler	5,021
Hugo	K. P. R. R	5,050
Hukill	C. C. R. R	7,626
Hunchback Mountain	Wheeler	13,755
Hunt's Mountain	Wheeler	14,054
Hunt's Peak	Wheeler	14,055
Do	Hayden	12,333
Hunt's Peak, foot of	Wheeler	10,517
Hurricane Peak	Wheeler	13,565
Husted's	D. & R. G. R. R	6,575
Idaho Springs	Wheeler	7,284
Do	C. C. R. R	7,541
Ignacio	D. & R. G. R. R	6,415
Indian Creek Pass	Wheeler	9,803
Iron Mine	D. & R. G. R. R	9,005
Iron Springs	A., T. & S. F. R. R	4,674
Jack's Cabin	D. & R. G. R. R	8,284
James' Peak	Hayden	13,283
Do.....Timber line on		11,100
Jamestown	Hayden	7,123
Jefferson	Wheeler	9,863
Do	Hayden	9,868
Do	Parry	9,842
Johnson	D. P. R. R	4,826
Johnson's Ford, Umcompahgre River	Wheeler	5,702
Juniata	D. & R. G. R. R	6,319
Junction House	Hayden	8,153
Junction Peak	King	7,868
Kahuah	D. & R. G. R. R	4,649
Keeldar	D. & R. G. R. R	9,948
Kelley	D. & R. G. R. R	5,614
Kelso Cabin	Hayden	10,893
Kendall, Mount	Hayden	13,380
Do	Wheeler	13,542
Kenny's Ranch, on Dead Man's Creek	Wheeler	7,830
Kenosha Cones	Hayden	12,350 12,340
Kenosha House	D. & S. P. R. R	9,606
Kenosha Summit	D. & S. P. R. R	9,905
Kezar	D. & R. G. R. R	7,409
Kit Carson	K. P. R. R	4,289
Kit Carson's Peak	Hayden	14,100
Kokomo	D. & R. G. R. R	10,609
Labran	D. & R. G. R. R	5,167
Do....Florence Coal Creek Junction		5,177
Do....Astronomical Station	Wheeler	5,218
La Jara	D. & R. G. R. R	7,587
La Junta	Wheeler	4,094
Do	A., T. & S. F. R. R	4,044
Do	Wheeler	6,612
Lake	K. P. R. R	5,301
Lake City	Wheeler	8,753

Station.	Authority.	Elevation.
		Feet.
Lake City	Hayden	8,550
Lake Creek Pass	Wheeler	12,226
Lake House, on slope Pike's Peak	Wheeler	10,108
Lambert	Wheeler	6,561
Lamborn, Mount	Hayden	11,337
Lambton	D. & R. G. R. R	6,537
Land's End	Hayden	10,634
Lane's Ranch	Wheeler	6,380
La Plata	D. & R. G. R. R	9,950
La Plata Junction	D. & R. G. R. R	9,950
La Plata, Mountain	Wheeler	13,316
Do	Hayden	14,311
Do Timber line on	Hayden	12,080
Laporte	King	5,065
Lariat	D. & R. G. R. R	7,643
Larkspur	D. & R. G. R. R	6,649
Las Animas (west)	Wheeler	3,886
Do	A., T. & S. F. R. R	3,854
Latham		4,600
La Veta	D. & R. G. R. R	7,002
La Veta Peak	Wheeler	11,654
Lawson	C. C. R. R	8,111
Leadville	D. & R. G. R. R	10,178
Lennox	D. & R. G. R. R	4,705
Leonard's Ranch, Arkansas River	Wheeler	8,335
Leon Peak	Hayden	10,954
Do	Wheeler	11,218
Lillie's Mountain	Hayden	11,433
Do Timber line on	Hayden	11,100
Lime Kiln	D. & R. G. R. R	5,552
Do	D. & R. G. R. R	6,219
Lime Stone	D. & R. G. R. R	4,862
Lime or White Earth Creek Pass	Wheeler	11,314
Lincoln, Mount	Wheeler	14,375
Do	Hayden	14,297
Do Timber line on	Hayden	12,051
Lindstrom's Mill	Parry	8,738
Little Butte	D. & R. G. R. R	5,346
Little Giant	D. & R. G. R. R	10,046
Littleton	D. & R. G. R. R	5,350
Lockwood's Ranch	Wheeler	4,997
Loma, Camp	Ruffner	8,069
Lone Cone	Hayden	12,761
Long's Cañon	Wheeler	8,402
Long's Pass	Palmer	7,660
Long's Peak	Hayden	14,271
Do	King	14,050
Do Timber line on	Hayden	11,100
Los Piños	D. & R. G. R. R	9,615
Do Agency	Hayden	9,290
Do	Wheeler	9,065
Lost Knife Pass	Palmer	8,400
Lost Park Mountain	Hayden	11,800
Lumber Spur	D. & R. G. R. R	9,074
Lupton, Fort	D. P. R. R	4,896
Lyon, Fort	Wheeler	3,910
Machissett		5,520
Macomb's Peak	Wheeler	13,154
Madge	D. & R. G. R. R	6,716
Magnolia	K. P. R. R	5,336
Malta	D. & R. G. R. R	9,558
Do Lizzie Smelter Junction	D. & R. G. R. R	9,608
Do Adobe Smelter Junction	D. & R. G. R. R	9,661
Manitou	D. & R. G. R. R	6,302

Station.	Authority.	Elevation.
		Feet.
Manitou	Hayden	6,357
Marcellina, Mount	Hayden	11,324
Do	Wheeler	11,319
Marleston Peak	Wheeler	10,874
Marmot Peak	Hayden	11,600
Maroon Mountain	Hayden	14,003
Marshall	G. B. & C. R. R	5,529
Marshall's Pass	Wheeler	10,852
Marshes	D. & R. G. R. R	6,325
Mary Lake	Toner	9,324
Masonville		6,960
Massive Mountain	Hayden	14,298
Do ..... Timber lineon	Hayden	11,607
Maysville	D. & R. G. R. R	8,298
McClellan Mountain	Hayden	13,423
Do	Wheeler	13,842
McClure's Ranch	Wheeler	5,318
McLaughlin's Ranch	Wheeler	9,672
Meadows	D. & R. G. R. R	4,796
Mears	D. & R. G. R. R	8,412
Do.. Saguache Junction	D. & R. G. R. R	8,417
Mear's Peak	Wheeler	13,008
Meig's Peak	Wheeler	13,394
Merritt's Ranch	Hayden	7,360
Mesa Verde		7,000–8,500
Mesquite Pass	Wheeler	13,308
Middle Boulder		8,263
Middle Park (mean elevation)		7,500
Midway	D. & R. G. R. R	7,380
Mill City	Toner	7,826
Mill No. 2	D. & R. G. R. R	6,009
Mincio	D. & R. G. R. R	9,319
Mineral City	Wheeler	11,474
Mineral Creek Pass	Hayden	11,098
Mirage	K. P. R. R	4,841
Missouri City	Parry	9,073
Mitchell's	D. & R. G. R. R	9,900
Monitor Peak	King	11,270
Montezuma	Whitney	10,295
Do	Wheeler	9,652
Montgomery	Whitney	10,783
Do	Hayden	11,181
Montrose	D. & R. G. R. R	5,771
Monument	D. & R. G. R. R	6,953
Morgan, Fort	Med. Dept., U. S. A	4,500
Morgan's Trading Post		6,229
Morley	A., T. & S. F. R. R	6,746
Morrison, Mount	Hayden	7,900
Mosca		7,950
Mosca Pass	Wheeler	9,787
Do	Kans. Pac. R. R. surveys	9,577
Do	Hayden	9,713
Mosquito	Wheeler	10,446
Mosquito Pass	Wheeler	13,308
Muddy Creek Pass	Hayden	8,772
Mule Shoe	D. & R. G. R. R	8,732
Nada	D. & R. G. R. R	4,701
Namagua		5,224
Nathrop	D. & R. G. R. R	7,673
Navajo	D. & R. G. R. R	6,566
Navesink Mountain	King	9,510
Nederland	Hayden	8,263
Needleton	D. & R. G. R. R	8,118
Nepesta	A., T. & S. F. R. R	4,354

Station.	Authority.	Elevation.
		Feet.
Nevada City	A., T. & S. F. R. R.	8,800
New Mexico Line	A., T. & S. F. R. R.	7,556
New Orleans Crossing	D. & R. G. R. R.	5,239
New York Ranch	Whitney	7,170
North Mam	Hayden	11,973
North Park		8,000–9,000
Oak Creek	D. & R. G. R. R.	5,331
Oak Creek Junction	D. & R. G. R. R.	5,187
Ohio Peak	Hayden	11,972
Ojo	D. & R. G. R. R	8,167
Ormus, Mount	Hayden	12,185
Osborn's Lake	Toner	8,821
Osier	D. & R. G. R. R.	9,615
Oso, Mount	Hayden	13,640
Otis	R. V. & B. & C. R. R	4,392
Ouray	Hayden	7,640
Ouray Mount	Hayden	14,043
Owen, Mount	Hayden	12,969
Oxford	A., T. & S. F. R. R	4,322
Pagoda Peak	Hayden	11,251
Pagosa Peak	Wheeler	12,676
Do	Hayden	12,674
Pagosa Springs	Hayden	7,095
Do	Wheeler	7,108
Park Cone	Hayden	12,021
Park Dale	D. & R. G. R. R.	5,715
Park View Peak	Hayden	12,433
Do.....Timber line on	Hayden	11,100
Parlins	D. & R. G. R. R	7,928
Parrott City	Hayden	8,633
Parry's Peak	Parry	13,133
Pass Mountain	Hayden	11,200
Peale, Mount	Hayden	13,004
Pegasus Spring	Hayden	5,650
Petersburgh	D. & R. G. R. R.	5,302
Pidgeon's Peak	Hayden	13,928
Pierce	D. P. R. R.	5,026
Pike's Peak	U. S. Signal Office	14,147
Do	Parry	14,216
Do....Signal Station	U. S. Signal Office	14,134
Do....Timber line on	Hayden	11,720
Pine Creek	D. & R. G. R. R	8,738
Piñon	D. & R. G. R. R	5,016
Pintado Peak	Hayden	13,176
Pipes	Col. Cent. R. R	7,239
Pisgah, Mount	Hayden	10,322
Do	Wheeler	10,487
Pisgah Peak, Little	Wheeler	10,027
Placer	D. & R. G. R. R	8,388
Placer Iron Mine	D. & R. G. R. R	8,586
Placer Iron Mine Junction	D. & R. G. R. R	8,417
Platte Mountain	Hayden	9,343
Platte Pulpit	Hayden	8,000
Platte Summit	R. V. B. & C. R. R	5,094
Platteville	D. P. R. R	4,812
Platte Junction	D. & R. G. R. R.	5,385
Pleasant Valley	Wheeler	6,271
Pole Creek Mountain	Wheeler	13,400
Poncho	D. & R. G. R. R	7,458
Poncho, Maysville Junction	D. & R. G. R. R	7,488
Poncho Pass	Wheeler	8,945
Ponil Pass	Wheeler	9,848

Station.	Authority	Elevati
		F
Post-oak Pass	Palmer	7,
Powell, Mount	Hayden	13,
Do .....Timber line on	Hayden	11,
Princeton, Mount	Hayden	14,
Do	Wheeler	14,
Do .....Timber line on	Hayden	11,
Prospect Hill	Hayden	8,
Prospect Peak	Wheeler	9,
Prowers	A., T. & S. F. R. R	3,
Ptarmigan Peak	Hayden	13,
Pueblo, track at depot	Wheeler	4,
Do	A., T. & S. F. R.R	4,
Puncho Creek, Saw-mill	Wheeler	8,
Pyramid Peak	Hayden	11,
Do	Hayden	13,
Quandary Peak	Hayden	14,
Quarry	D. & R. G. R. R	6,
Rabbit Ears Mountain	Hayden	10,
Ralston Butte	Hayden	10,
Raton Pass	Wheeler	7,
Raynolds, Fort	Wheeler	4,
Recen	D. & R. G. R. R	10,
Red Cliff	D. & R. G. R. R	8,
Red Cloud Peak	Wheeler	14,
Red Mountain	Wheeler	12,
Do	Wheeler	13,
Do .....Timber line	Wheeler	11,
Red Peak	Hayden	12,
Reed's Ranch	Wheeler	7,
Rhyolite Peak	Hayden	10,
Rio Grande Pyramid	Hayden	13,
Rito Alto	Wheeler	8,
Rito Alto, Mount	Hayden	12,
Do	Wheeler	12,
Do .....Timber line on	Wheeler	11,
River Bend	Kans. Pac. R. R	4,
Riverside	Wheeler	8,
Do	D. & R. G. R. R	8,
Roan	D. & R. G. R. R	4,
Roan or Book Plateau (crest)	Hayden	8,000 to 8,
Robinson's	D. & R. G. R. R	10,
Robinson	A., T. & S. F. R. R	3,
Rock Cliff Post-Office	Wheeler	8,
Rock Creek	D. & R. G. R. R	8,
Rockvale	A., T. & S. F. R. R	5,
Rockwood	A., T. & S. F. R. R	7,
Rocky Butte	Wheeler	8,
Rocky Ford	A., T. & S. F. R. R	4,
Rollinsville	Hayden	8,
Rosalie, Mount	Hayden	14,
Do	Wheeler	14,
Rosita	Wheeler	8,
Rosita (sun dial)	Wheeler	8,
Roubideau's Pass	Pac. R. R. Reports	9,
Round Hill	D. & R. G. R. R	8,
Round Mountain P. O	Wheeler	8,
Round Peak	Wheeler	12,
Rowter, Mount	Ruffner	13,
Ryan's	D. & R. G. R. R	9,
Saguache	Wheeler	7,
Do	Hayden	7,
Saint John's	Whitney	10,
Saint Mary's	Wheeler	6,

Station.	Authority.	Elevation.
		Feet.
Saint Mary's	Hayden	6,067
Saint Vrain's	Parry	5,256
Salida, Gunnison Junc	D. & R. G. R. R	7,028
Salt Creek	D. & R. G. R. R	5,442
Salt Works, South Park	D. & S. P. R. R	8,894
Do	Whitney	9,008
Do	Hayden	8,749
San Carlos	D. & R. G. R. R	4,912
San Cristoval, Lake	Hayden	9,000
San Francisco Pass	Palmer	8,560
Sangre de Christo	D. & R. G. R. R	9,042
Sangre de Christo Pass	Wheeler	9,578
Do	U. P. R. R. Surveys	9,186
Do	Hayden	9,454
San Isabel	Wheeler	7,537
San Juan City	Wheeler	8,901
San Luis de Culebra	Wheeler	7,596
San Luis Lake	Wheeler	7,535
Do	Hayden	7,592
San Luis Peak	Hayden	14,100
San Luis Valley	Hayden	7,000 to 8,000
San Miguel Lake	Hayden	9,720
Santa Clara	D. & R. G. R. R	6,180
Sapinero	D. & R. G. R. R	7,223
Sargents	D. & R. G. R. R	8,456
Scraggy Butte	Hayden	8,600
Sedalia	D. & R. G. R. R	5,815
Sedgwick, Fort	Smithsonian Inst	3,600
Serape	D. & R. G. R. R	6,210
Shale	D. & R. G. R. R	4,575
Shavano, Mount	Hayden	14,239
Sheep Mountain	Hayden	12,589
Shingled Mountain	Hayden	12,072
Shirley	D. & R. G. R. R	8,654
Sierra Blanca, timber line on	Hayden	10,410
Signal Butte	Hayden	8,800
Silesia Butte	Wheeler	13,699
Silla	D. & R. G. R. R	6,650
Silverheels, Mount	Hayden	13,897
Do	Whitney	13,832
Do.....Timber line on	Hayden	11,549
Silver Plume	G. L. & S. J. R. R	9,074
Silverton	Hayden	9,400
Do	D. & R. G. R. R	9,202
Simpson, Mount	Wheeler	14,055
Sizer's Ranch	Wheeler	4,040
Skull Creek Pass	Hayden	7,797
Slate Mountain	Hayden	12,891
Slate Ranch	Wheeler	9,257
Smith Hill	Col. Cent. R. R	7,626
Smith's Peak	Hayden	13,093
Sneffels, Mount	Hayden	14,158
Snowmass Mountain	Hayden	13,970
Snyder's Ranch	Wheeler	8,127
Soda Springs, Animas Park	D. & R. G. R. R	6,828
Do	Hayden	6,853
Soledad	D. & R. G. R. R	6,355
Sopris Peak	Hayden	12,823
South Arkansas P. O	Wheeler	7,383
South Boulder Peak	Hayden	8,533
South Fork	D. & R. G. R. R	8,166
South Mam	Hayden	10,897
South Park	Hayden	8,000–10,000
South Platte	G. & S. P. R. R	5,049

Station.	Authority.	Elevation.
		Feet.
South Platte Bridge	Wheeler	7,978
South Pueblo	D. & R. G. R. R	4,647
Do..... Union Depot	A. T. & S. F. R. R	4,639
South River Peak	Hayden	13,160
Spanish Peaks, E	Hayden	12,720
Do..... W	Hayden	13,620
Do..... W	Wheeler	13,718
Spring Valley		6,647
Squaw	Hayden	11,733
Starkville	A. T. & S. F. R. R	6,331
Star Ranch	Wheeler	7,327
Stern's Store	Wheeler	9,068
Stevens	Col. Cent. R. R	8,126
Stevens' Mine	Hayden	11,943
Stewart's Peak	Hayden	14,032
Do	Wheeler	14,032
Stormy Peak	Hayden	9,200
Sugarloaf	Hayden	8,933
Sultan Mountain	Hayden	13,366
Do	Wheeler	13,501
Summit Mines, general level	Wheeler	11,089
Summit Peak	Hayden	13,323
Table Mountain (north)	Hayden	6,650
Do..... (south)	Hayden	6,167
Tank Peak	King	8,929
Tarryall	Whitney	10,078
Do	Hayden	10,254
Do	Parry	9,932
Tarryall Pass	Hayden	12,176
Tarryall Peak	Hayden	12,466
Tempus	A. T. & S. F. R. R	4,407
Tennessee Pass	Wheeler	10,702
Do	Hayden	10,418
Teocalli	Hayden	13,113
Terrible Mine	Hayden	9,243
Tétons	Wheeler	14,198
Texas Creek	D. & R. G. R. R	6,196
Thatcher	A. T. & S. F. R. R	5,399
Thomas, Mount	Wheeler	11,496
Thompson's	D. & R. G. R. R	4,987
Thompson's Park	Hayden	7,530
Three Point Block	Wheeler	12,190
Thunder Butte	Hayden	9,500
Tollgate	D. & R. G. R. R	8,197
Tollgate, Poncho Creek Road	Wheeler	8,216
Torrey's Peak	Hayden	14,336
Do	Whitney	14,375
Treasury Mountain	Hayden	13,200
Trinchera	D. & R. G. R. R	8,082
Trinchera Pass	K. P. R. R. surveys	7,079
Trinchera Peak	Hayden	13,546
Do	Wheeler	13,681
Trinidad	Toner	5,820
Do	A. T. & S. F. R. R	5,965
Do..(astronomical monument)	Wheeler	5,990
Troublesome Peak	Hayden	11,500
Trout Creek Pass	D. & S. P. R. R	9,386
Do	Hayden	9,346
Do	Wheeler	9,612
Trout Lake	Wheeler	9,700
Tumichi Dome	Hayden	11,384
Twin Creek Pass	Wheeler	8,568
Twin Lakes	D. & R. G. R. R	9,005

Station.	Authority.	Elevation.
		Feet.
Twin Lakes	Hayden	9,357
Tyrone	A. T. & S. F. R. R	5,518
Uncompahgre	Hayden	6,400
Uncompahgre Peak	Wheeler	14,408
Do	Hayden	14,235
Uncompahgre Plateau (crest)	Hayden	9,000–10,000
Unagua Spring	Hayden	8,141
Union Cross Roads		6,287
Union Park	Wheeler	9,655
Utah Line	D. & R. G. R. R	4,725
Ute Peak (El Laté)	Wheeler	10,152
Do	Hayden	9,884
Ute Peak (Middle Park)	Hayden	11,968
Vallejo	D. & R. G. R. R	6,200
Valley Station		4,500
Vallie	D. & R. G. R. R	6,513
Valmont	D. & B. V. R. R	5,172
Varnum's P. O	Wheeler	7,990
Vasquez Pass		11,500
Velie's Peak	Parry	13,456
Venable's Ranch	Wheeler	7,628
Venado Peak	Hayden	12,800
Vernon, Mount	Parry	6,479
Veta Pass	Wheeler	9,494
Villa Grove Depot	D. & R. G. R. R	7,951
Villa Grove P. O	Wheeler	8,127
Virginia Peak	Hayden	10,600
Vulcan Crest	Wheeler	13,971
Wagon-wheel Gap	Wheeler	8,372
Do	D. & R. G. R. R	8,427
Wahatoya	D. & R. G. R. R	6,482
Walsen's	D. & R. G. R. R	6,167
Walsen's Mines	D. & R. G. R. R	6,200
Washington Gulch	Wheeler	10,132
Weavers	D. & R. G. R. R	4,992
Weeminuche Pass	Hayden	10,670
West Cliff	D. & R. G. R. R	7,842
West Denver	D. & R. G. R. R	5,179
West Elk Peak	Hayden	12,920
Weston's Pass	Wheeler	12,109
Wetterhorn	Wheeler	14,069
Whale Peak	Hayden	13,104
Wheeler's	D. & R. G. R. R	9,759
White Earth Creek P. O	Wheeler	8,163
Whiteface Peak	Hayden	11,493
Whitehead	King	10,817
White River Agency	Hayden	6,491
White River Plateau	Hayden	11,000–12,000
White Rock Mountain	Hayden	13,357
Do ..... Timber line on	Hayden	11,919
White Ranche, Huerfano Park	Wheeler	7,469
White Water	D. & R. G. R. R	4,635
Widefield	D. & R. G. R. R	5,697
Wigwam	D. & R. G. R. R	5,211
Wilcox Ranch, Antelope Park	Wheeler	9,000
Wild Flax Pass	Palmer	8,900
Wild Horse	Kans. Pac. R. R	4,438
Williams, Mount	Hayden	11,413
Willow Creek Pass	Hayden	9,683
Wilson, Mount	Hayden	14,280
Do	Wheeler	14,309
Wilson's	Col. Cent. R. R	7,481
Wood Valley		5,533

Station.	Authority.	Elevation.
		Feet.
Wray	R. V. & B. & C. R. R.	3,519
Yale, Mount	Hayden	14,187
Do	Whitney	14,263
Do	Wheeler	14,121
Yampa Peak	King	8,022
Yellow Jacket Pass	Hayden	7,493
Yellow Peak	Wheeler	13,618
Zenobia Peak	King	9,297
Zirkel Mountain	King	12,126

CONNECTICUT.

Station.	Authority.	Elevation.
		Feet.
Avon	N. H. & Northampton R. R.	242
Berlin	N. Y., N. H. & Htfd R. R	63
Berlin, junction with Middletown R. R.	N. Y., N. H. & Htfd R. R	64
Bridgeport, bridge near R. R. depot	U. S. C. & G. S	7
Do.....station, junction with Housatonic R. R.	N. Y. & N. H. R. R.	9
Brookfield	Housatonic R. R	338
Canaan	Housatonic R. R	627
Carmel Mountain	U. S. C. & G. S	739
Cheshire	N. H. & Northampton R. R.	166
Congamond Lakes	N. H. & Northampton R. R	227
East Rock	U. S. C. & G. S	362
Danbury, D. & N. R. R	Bost. & N. Y. R. R	397
Farmington	N. H. & Northampton R. R	204
Granby	N. H. & Northampton R. R	204
Great Rock or Rabbit Rock	U. S. C. & G. S	376
Hartford	N. Y., N. H. & Htfd R. R	39
Hawleyville	Housatonic R. R	306
Hickox	U. S. C. & G. S	651
Joshua Station	U. S. C. & G. S	608
Lakeville	Conn. Western R. R	670
Meriden	N. Y., N. H. & Htfd R. R	131
Middletown	N. Y., N. H. & Htfd R. R	23
Mount Carmel	N. H. & Northampton R. R	114
Mystic	N. Y., Prov. & Boston R. R.	7
New Britain	N. Y., N. H. & Htfd R. R	179
New Hartford	Conn. Western R. R	389
New Haven, Chapel street Bridge	U. S. C. & G. S	6
Do.....State street Bridge	U. S. C. & G. S	11
Do.....New Road	U. S. C. & G. S	34
Do.....large granite post in green	U. S. C. & G. S	30
Do	N. Y., N. H. & Htfd. R. R	10
Do.....Sheffield Scientific school	U. S. C. & G. S	38
Do.....& Shoreline Junction	N. Y., N. H. & Hftd. R. R	20
Do.....Signal Station	U. S. Signal Office	106
New London	N. Y., N. H. & Htfd. R. R	9
Do.....Signal Station	U. S. Signal Office	47
New Milford	Housatonic R. R	224
New Rochelle Junction	N. Y., N. H. & Htfd. R. R	82
Noank	N. Y., Prov. & Boston R. R	14
Norfolk	Conn. Western R. R	1,220
Norwalk Station, Junction with Danbury R. R	N. Y. & N. H. R. R	25
Norwich, Main St	New London Northern R. R.	7
Plainfield	Htfd., Prov. & Fishkill R. R.	162
Plainville	N. H. & Northampton R. R	191
Poquonock	N. Y., Prov. & Boston R. R.	8
Saybrook, junction with Connecticut Valley R. R	N. Y., N. H. & Htfd. R. R	24
Simsbury	N. H. & Northampton R. R	167
Southington	N. H. & Northampton R. R.	152

Station.	Authority.	Elevation.
		Feet.
Stamford	N. Y. & N. H. R. R.	12
Thompson, E. So. Bridge R. R.	Bost. & N. Y. R. R	483
Vernon, Rockville Branch	Bost. & N. Y. R. R	242
Waterbury	Htfd., Prov. & Fishkill R. R.	260
West Mystic	N. Y., Prov. & Bost. R. R	0
West Rock	U. S. C. & G. S.	405
West Winsted	Conn. Western R. R	720
Willimantic	Htfd., Prov. & Fishkill R. R.	233
Windsor Locks	N. Y., N. H. & Htfd. R. R	40

DAKOTA.

Station.	Authority.	Elevation.
		Feet.
Abraham Lincoln, Fort		2,211
Alcester	Dak. Cent. R. R	1,355
Altamont	C. N. W. R. R	1,834
Apple Creek Valley	N. P. R. R	1,711
Aurora	C. & N. W. R. R	1,630
Austin		1,221
Belfield	N. P. R. R	2,577
Bennett, Fort, Signal Station	U. S. Signal Office	1,440
Beresford	Dak. Cent. R. R	1,505
Berthold, Fort		1,873
Big Sioux River, water 2d crossing	C. M. & St. P. R. R	1,479
Bismarck	N. P. R. R	1,668
Do..Signal Station	U. S. Signal Office	1,677
Do..Mo. River, low water	N. P. R. R	1,616
Blue Lake	Fargo & S. W. R. R	1,965
Bois des Sioux	Toner	1,039
Brochel Lake	Nicollet	1,860
Brookings	C. & N. W. R. R	1,636
Buford, Fort	Smithsonian Inst	2,017
Do.....Signal Station	U. S. Signal Office	1,876
Burbank	S. C. & D. R. R	1,153
Canistota	Dak. Cent. R. R	1,555
Canova	Dak. Cent. R. R	1,525
Canton	S. C. & D. R. R	1,291
Carthage	Dak. Cent. R. R	1,440
Casselton	N. P. R. R	930
Cavour	C. & N. W. R. R	1,311
Centreville	Dak. Cent. R. R	1,233
Clark Centre	Dak. Cent. R. R	1,785
Clark, Fort	Petermann	1,827
Cleveland	N. P. R. R	1,840
Coteau du Missouri		1,800–2,000
Coteau des Prairies		1,500–1,800
Cotters Depot	Fargo & S. W. R. R	909
Crook's Tower	Jenny	7,600
Davenport Depot	Fargo & S. W. R. R	921
Davis Junction	S. C. & D. R. R	1,130
Deadwood, Signal Station	U. S. Signal Office	4,630
De Smet	C. & N. W. R. R	1,726
Dickinson	N. P. R. R	2,403
Devil's Lake	Thomas	1,467
Doland	Dak. Cent. R. R	1,355
Driscoll	N. P. R. R	1,835
Eden	S. C. & P. R. R	1,239
Egan	C. M. & St. P. R. R	1,510
Elk Point	S. C. & D. R. R	1,142
Eskelon Lake (station)	N. P. R. R	1,447
Eskelon Lake, water	N. P. R. R	1,432
Esmond	Dak. Cent. R. R	1,430
Fairview	C. & N. W. R. R	1,542
Do	S. C. & D. R. R	1,231
Fargo	N. P. R. R	903
Fawn Lake, water	St. P. & S. C. R. R	1,320
Flandreau	C. M. & St. P. R. R	1,550
Frankfort	Dak. Cent. R. R	1,296
Gary	C. & N. W. R. R	1,484
Gaysville	S. C. & D. R. R	1,178

Station.	Authority.	Elevation.
		Feet.
Gladstone	N. P. R. R	2,346
Glenullin	N. P. R. R	2,070
Goodwin	C. & N. W. R. R	1,996
Greenwood	Smithsonian Inst	1,900
Harney's Peak	Ludlow	9,700
Hartford Siding	St. P. & S. C. R. R	1,561
Hawarden	Dak. Cent. R. R	1,182
Henry	Dak. Cent. R. R	1,810
Herman	C. M. & St. P. R. R	1,654
Herman, Lake	C. M. & St. P. R. R	1,646
Horace Depot	Fargo & S. W. R. R	917
Hurley	Dak. Cent. R. R	1,272
Huron	C. & N. W. R. R	1,285
Huron Junction	C. & N. W. R. R	1,312
Iroquois	C. & N. W. R. R	1,401
Jamestown	N. P. R. R	1,395
Jefferson	S. C. & D. R. R	1,130
Kampeska, Lake	C. & N. W. R. R	1,650
Kampeska, Lake, water	C. & N. W. R. R	1,714
Kamskusahkee Lake	P. R. R. Reports	2,431
Kranzbury	C. & N. W. R. R	1,982
Little Missouri	N. P. R. R	2,255
Little Missouri Buttes	Jenney	5,500
McCook	S. C. & D. R. R	1,123
McKenzie	N. P. R. R	1,696
Madison Lake	C. M. & St. P. R. R	1,576
Mandan	N. P. R. R	1,644
Mapleton	N. P. R. R	903
Meckling	S. C. & D. R. R	1,167
Millbank Junction	C. M. & St. P. R. R	1,149
Montrose Siding	St. P. & S. C. R. R	1,471
New Buffalo	N. P. R. R	1,206
New Madison	C. M. & St. P. R. R	1,646
Noreland	C. & N. W. R. R	1,846
Oakwood Settlement	Nicollet	1,341
Oriska	N. P. R. R	1,240
Parker	Dak. Cent. R. R	1,340
Pembina, Signal Station	U. S. Signal Office	791
Pierre	C. & N. W. R. R	1,438
Pierre, Fort	Med. Dep't, U. S. A	1,456
Preston, Lake	C. & N. W. R. R	1,696
Randall, Fort	Med. Dep't, U. S. A	1,245
Ransom, Fort	Med. Dep't, U. S. A	1,438
Richardson	N. P. R. R	2,464
Richland		1,247
Salem	St. P. & S. C. R. R	1,517
Sanborn	N. P. R. R	1,460
Sedalia	N. P. R. R	2,030
Sentinel Butte	N. R. R. R	2,707
Sheyenne River	N. P. R. R	1,200
Sims	N. P. R. R	1,960
Sioux Falls	S. C. & D. R. R	1,411
Do	C. M. & St. P. R. R	1,638
Do	St. P. & S. C. R. R	1,387
Sioux Falls Junction	C. M. & St. P. R. R	1,496
South Heart	N. P. R. R	2,470
Spiritwood	N. P. R. R	1,477
Square House		2,120
Steele	N. P. R. R	1,857
Stevenson, Fort, Signal Station	U. S. Signal Office	1,734
Sully, Fort	U. S. Signal Office	1,688
Sully Spring	N. P. R. R	2,647
Tappen	N. P. R. R	1,760

Station.	Authority.	Elevation.
		Feet.
Totten, Fort	Thorne	1,480
Union, Fort	Toner	1,970
Valley City	N. P. R. R	1,218
Valley Springs	St. P. & S. C. R. R	1,392
Vermillion	S. C. & D. R. R	1,161
Vilas	Dak. Cent. R. R	1,480
Virginia	S. C. & D. R. R	1,221
Volga	C. & N. W. R. R	1,636
Wadsworth, Fort		1,896
Do	Smithsonian Inst	1,650
Warren's Peak	Jenney	6,900
Watertown	Dak. Cent. R. R	1,735
Wheatland	N. P. R. R	985
Yankton	S. C. & D. R. R	1,196
Do..Agency	Smithsonian Inst	1,900
Do..Signal Station	U. S. Signal Office	1,228

DELAWARE.

Station.	Authority.	Elevation.
		Feet.
Bellevue	P. W. & B. R. R	14
Bridgeville	D. R. R	55
Canterbury	D. R. R	69
Centre	W. & R. R. R	263
Chesapeake and Delaware Canal Crossing	D. R. R	61
Claymont	P. W. & B. R. R	30
Clayton	D. R. R	45
Delaware Breakwater, Signal Station	U. S. Signal Office	20
Delaware City	Pa. & Del. R. R	16
Delmar	E. S. R. R	32
Dover	D. R. R	39
Dupont's	W. & R. R. R	282
Georgetown	J. & B. R. R	52
Harrington	D. R. R	63
Holly Oak	P. W. & B. R. R	10
Lewes	J. & B. R. R	9
Middletown	D. R. R	66
Milford	J. & B. R. R	15
Newark	P. W. & B. R. R	106
Do..crossing of the Delaware R. R	Pa. & Del. R. R	118
Newport	P. W. & B. R. R	21
Oak Grove	D. & D. R. R	97
Rodney, junction with New Castle and French Town R. R	D. R. R	87
Ross	D. R. R	42
Staunton	P. W. & B. R. R	17
Townsend	D. R. R	71
Wilmington	P. W. & B. R. R	7

DISTRICT OF COLUMBIA.

Station.	Authority.	Elevation.
		Feet.
Capitol, dome	U. S. C. & G. S.	379.00
Do..east front, ground in front of central steps	U. S. C. & G. S.	89.00
Caustin, ground at △	U. S. C. & G. S.	386.00
Coast Survey Office, top of roof at flagstaff	U. S. C. & G. S.	137.00
Do.....floor of vestibule	U. S. C. & G. S.	78.00
Georgetown College, observatory	U. S. C. & G. S.	209.00
Insane Asylum, U. S., top of balustrade on tower	U. S. C. & G. S.	255.00
Insane Asylum, U. S., ground at north front of tower	U. S. C. & G. S.	173.00
Naval Observatory, U. S., top of small dome	U. S. C. & G. S.	150.00
Navy-yard, bridge, curbstone east end, B. M. No. 2	U. S. C. & G. S.	8.00
Navy-yard, tide gauge	U. S. C. & G. S.	0.27
Do ....B. M	U. S. C. & G. S.	5.00
Do ....platform foot of flagstaff	U. S. C. & G. S.	39.00
Smithsonian Institution, top of balustrade on highest tower	U. S. C. & G. S.	175.00
Smithsonian Institution, ground north front of tower	U. S. C. & G. S.	34.00
Soldiers' Home, top of old balustrade	U. S. C. & G. S.	410.00
Do .....foot of tower, south side	U. S. C. & G. S.	330.00

FLORIDA.

Station.	Authority.	Elevation.
		Feet.
Anthony Place	A. G. & W. I. T. R. R.	72
Archer	A. G. & W. I. T. R. R.	80
Arredonda	A. G. & W. I. T. R. R.	70
Baldwin Junction	A. G. & W. I. T. R. R.	47
Barton	A. G. & W. I. T. R. R.	75
Bronson	A. G. & W. I. T. R. R.	27
Callahan	A. G. & W. I. T. R. R.	30
Cedar Key	A. G. & W. I. T. R. R.	10
Do ....Signal Station	U. S. Signal Office	22
Dutton	A. G. & W. I. T. R. R.	45
Fernandina	A. G. & W. I. T. R. R.	10
Gainesville	A. G. & W. I. T. R. R.	128
Hawthorne	A. G. & W. I. T. R. R.	150
Highland, Trail Ridge, summit of R. R.	A. G. & W. I. T. R. R.	210
Jacksonville, Signal Station	U. S. Signal Office	43
Key West, Signal Station	U. S. Signal Office	27
Lawtey	A. G. & W. I. T. R. R.	140
Lochloosa	A. G. & W. I. T. R. R.	53
Maxville	A. G. & W. I. T. R. R.	57
Ocala	A. G. & W. I. T. R. R.	100
Orange Lake	A. G. & W. I. T. R. R.	53
Pensacola, Signal Station	U. S. Signal Office	30
Punta Rassa, Signal Station	U. S. Signal Office	13
Rose Wood	A. G. & W. I. T. R. R.	12
Santa Fé	A. G. & W. I. T. R. R.	150
Silver Spiing	A. G. & W. I. T. R. R.	32
Starke	A. G. & W. I. T. R. R.	150
Thurston	A. G. & W. I. T. R. R.	140
Waldo	A. G. & W. I. T. R. R.	150

GEORGIA.

Station.	Authority.	Elevation.
		Feet.
Academy Mountain	U. S. C. & G. S	1,136
Acworth	W. & A. R. R	926
Adairville	W. & A. R. R	710
Alappeha Station	B. & A. R. R	267
Albany	S. W. R. R	232
Do	B. & A. R. R	168
Alcova Mountain	U. S. C. & G. S	1,090
Alcovy	Ga. R. R	721
Do..level low water in Alcovy River	Ga. R. R	654
Allatoona	W. & A. R. R	878
Americus	S. W. R. R	362
Andersonville	S. W. R. R	396
Antioch	Ga. R. R	778
Athens	Ga. R. R	694
Atlanta	Ga. R. R	1,050
Do	M. & W. R. R	1,050
Do	W. & A. R. R	1,050
Do	A. & R. A. L. R. R	1,050
Do..signal station	U. S. Signal Office	1,131
Augusta	Ga. R. R	134
Do..signal station	U. S. Signal Office	183
Barnesville	M. & W. R. R	875
Barnett	Ga. R. R	647
Barton	W. & A. R. R	845
Baxley	M. & B. R. R	210
Beallwood	C. & R. R. R	387
Belair	Ga. R. R	309
Belleville	A. & R. R. R	1,342
Berzelia	Ga. R. R	502
Bests	W. & A. R. R	750
Big Shanty	W. & A. R. R	1,100
Blood Mountain	U. S. C. & G. S	4,463
Bolton	W. & A. R. R	850
Bowersville	Elberton R. R	934
Bowman	Elberton R. R	796
Brookfield	B. & A. R. R	303
Brown's Station	S. W. R. R	371
Brunswick	M. & B. R. R	14
Buckhead	Ga. R. R	626
Buford	A. & R. A. L. R. R	1,207
Bullard	M. & B. R. R	265
Buzzard's Roost	M. & B. R. R	240
Calhoun	W. & A. R. R	657
Camak	Ga. R. R	592
Camp Creek Ridge	S. W. R. R	308
Canton	M. & N. G. R. R	894
Do..about bed of Etowah River	M. & N. G. R. R	859
Capitol Tower Mountain, Atlanta	U. S. C. & G. S	1,163
Carrs	Ga. R. R	507
Cartersville	W. & A. R. R	760
Cass	W. & A. R. R	765
Cataula	C. & R. R. R	692
Cave Springs	S. R. & D. R. R	672
Center	N. E. R. R	850
Chauncey	M. & B. R. R	303
Clarkston	Ga. R. R	1,012
Clarksville C. H	U. S. C. & G. S	1,478
Cleveland Church	U. S. C. & G. S	1,616

Station.	Authority.	Elevat
		F
Cochran	M. & B. R. R	
Cohutta Mountain	U. S. C. & G. S	4,
Colman's	S. W. R. R	
Columbus	C. & R. R. R	
Concord	R. R. surveys	
Conyers	Ga. R. R	
Covington	Ga. R. R	
Do ....level low water in Yellow River	Ga. R. R	
Crawfordville	Ga. R. R	
Culloden	R. R. surveys	
Culverton	Ga. R. R	
Cumming	U. S. C. & G. S	1,
Currahee Mountain	U. S. C. & G. S	1,
Cuthbert Depot	S. W. R. R	
Dademont	Ala. G. S. R. R	
Dahlonega, Agricultural College	U. S. C. & G. S	1,
Dalton	S. R. & D. R. R	
Davis	B. & A. R. R	
Davisborough	C. R. R	
Dawson	S. W. R. R	
Dearing	Ga. R. R	
Decatur	Ga. R. R	1,
Deveraux	Ga. R. R	
Dome Mountain	U. S. C. & G. S	4,
Dormille	A. & R. A. L. R. R	1,
Dry Pond	A. & R. A. L. R. R	1,
Du Bois	M. & B. R. R	
Duluth	A. & R. A. L. R. R	1,
East Macon	C. R. R	
Eastman	M. & B. R. R	
East Point	A. & W. P. R. R	1,
Eden	C. R. R	
Egypt	C. R. R	
Elberton	Elberton R. R	
Emmit	C. R. R	
Enota Mountain	U. S. C. & G. S	4,
Fairburn	A. & W. P. R. R	1,
Fair Grounds	W. & A. R. R	
Fellowship Church	Elberton R. R	
Fodder's Bald Mountain	Guyot	4,
Forrest	Ga. R. R	
Forsyth	M. & W. R. R	
Fort Gaines Depot	S. W. R. R	
Do .....Bridge	S. W. R. R	
Fortsons	C. & R. R. R	
Fort Valley	S. W. R. R	
Fosterville	M. & W. R. R	
Gainesville	A. & R. A. L. R. R	1,
Gillsville	N. E. R. R	1,
Gilmore	W. & A. R. R	
Goodwin	A. & R. A. L. R. R	
Gordon	Cent. R. R	
Goss Store	Elberton R. R	
Graham	M. & B. R. R	
Grantville	A. & W. P. R. R	
Grassy Mountain	U. S. C. & G. S	3,
Graysville	W. & A. R. R	
Greensboro Depot	U. S. C. & G. S	
Do	Ga. R. R	
Griffin	M. & W. R. R	
Griswold	Cent. R. R	
Guyton	Cent. R. R	
Haddocks	Ga. R. R	
Halcyondale	Cent. R. R	

Station.	Authority.	Elevation.
		Feet.
Halls	W. & A. R. R	771
Hamilton	C. & R. R. R	786
Harbers	S. R. & D. R. R	648
Harlem	Ga. R. R	562
Harmony Grove	N. E. R. R	954
Hawkinsville	M. & B. R. R	235
Hazlehurst	M. & B. R. R	261
Herndon	Cent. R. R	174
Hines	C. & R. R. R	592
Hogansville	A. & W. P. R. R	731
Holly Springs	M. & N. G. R. R	1,114
Hood	C. & R. R. R	912
Isabella	B. & A. R. R	340
Jesup	M. & B. R. R	100
Jonesboro	M. & W. R. R	905
Kenesaw	U. S. C. & G. S	1,809
Kingsboro	C. & R. R. R	612
Kingston	W. & A. R. R	710
Knoxville	R. R. surveys	640
Lavonia	Elberton R. R	865
Lawrenceville	L. B. R. R	1,082
La Grange	A. & W. P. R. R	742
Lexington	Ga. R. R	770
Lithonia	Ga. R. R	937
Long Cane	A. & W. P. R. R	624
Lula	N. E. R. R	1,334
Lumber City	M. & B. R. R	150
McDaniels	W. & A. R. R	663
McDonald	Cent. R. R	245
McIvors	W. & A. R. R	965
McPherson Barracks	U. S. C. & G. S	1,078
McRae	M. & B. R. R	148
McVille	M. & B. R. R	148
Macon	M. & B. R. R	334
Madison	Ga. R. R	681
Marietta	M. & N. G. R. R	1,133
Marshallsville	D. W. R. R	493
Martins	Elberton R. R	917
Maxeys	Ga. R. R	742
Mayfield	Ga. R. R	402
Maysville	N. E. R. R	1,001
Messena	Ga. R. R	559
Milledgeville	Ga. R. R	310
Millen	Cent. R. R	158
Millwood	B. & A. R. R	130
Milner	M. & W. R. R	863
Mona	U. S. C. & G. S	5,039
Morris Station	S. W. R. R	244
Mount Airy	A. & R. A. L. R. R	1,587
Mud Creek Bald Mountain	Guyot	4,705
Nances	C. & R. R. R	537
New Holland	A. & R. A. L. R. R	1,182
Newnan	A. & W. P. R. R	959
Nicholson	N. E. R. R	893
Nochway Bridge	S. W. R. R	294
Noonday Valley	M. & N. G. R. R	949
Norcross	A. & R. A. L. R. R	1,078
Norwood	Ga. R. R	602
Oconee	Ga. R. R	447
Do. level low water in Oconee River	Ga. R. R	412
Ogeechee	C. R. R	106
Oglethorpe	S. W. R. R	301
Opelika	S. W. R. R	810

Station.	Authority.	Elevati
		F
Palmetto	A. & W. P. R. R	1,
Paramore Hill	Cent. R. R	
Peach	U. S. C. & G. S	1,
Pearson	B. & A. R. R	
Pendarvis	M. & B. R. R	
Pine Log Mountain	U. S. C. & G. S	2,
Pine Mountain	C. & R. R. R	1,
Powells	A. & W. P. R. R	
Prattsville	M. & W. R. R	
Pirors	S. R. & D. R. R	
Pucketts	A. & W. P. R. R	
Rabunor, Mud Creek Bald Mountain	U. S. C. & G. S	4,
Red Oak	A. & W. P. R. R	1,
Reid	M. & B. R. R	
Resaca	W. & A. R. R	
Rich Hill	R. R. surveys	
Ridge	U. S. C. & G. S	1,
Ringgold	W. & A. R. R	
Rising Fawn	Ala. G. S. R. R	
Riverside	B. & A. R. R	
Rives	S. R. & D. R. R	
Roberts	Ga. R. R	
Rogers	W. & A. R.	
Rome	S. R. & D. R. R	
Rough and Ready	M. & W. R. R	1,
Roystons	Elberton R. R	
Ruffs	W. & A. R. R	1,
Rutledge	Ga. R. R	
Sand Hill	M. & B. R. R	
Satilla	M. & B. R. R	
Savannah, Depot	Cent. R. R	
Do....Signal Station	U. S. Signal Office	
Sawdust	Ga. R. R	
Sawnee	U. S. C. & G. S	1,
Scarborough	Cent. R. R	
Seagos	S. W. R. R	
Sebastopol	Cent. R. R	
Sewall's Cut	W. & A. R. R	1,
Sitting Bull Mountain	U. S. C. & G. S	5,
Six Mile	S. R. & D. R. R	
Skitt Mountain	U. S. C. & G. S	2,
Smithville	S. W. R. R	
Smyrna	W. & A. R. R	1,
Social Circle	Ga. R. R	
South Mountain	Ga. R. R	1,
Sparta	Ga. R. R	
Spears	Cent. R. R	
Stegalls	W. & A. R. R	
Sterling	M. & B. R. R	
Stone Mountain	U. S. C. & G. S	1,
Stone Village	U. S. C. & G. S	1,
Sulphur Spring	A. & R. A. L. R. R	1,
Sulphur Springs	Ala. G. S. R. R	
Sumner	B. & A. R. R	
Surrency	M. & B. R. R	
Suwannee	L. B. R. R	1,
Sweat Mountain	U. S. C. & G. S	1,
Tallulah, S. E. Summit	U. S. C. & G. S	2,
Do ..N. W. Summit	U. S. C. & G. S	3,
Thomson	Ga. R. R	
Tilton	W. & A. R. R	
Toccoa	Elberton R. R	1,
Tonah Mountain	U. S. C. & G. S	3,
Tooni	M. & N. G. R. R	1,

Station.	Authority.	Elevation.
		Feet.
Towns	M. & B. R. R	135
Tray Mountain	U. S. C. & G. S	4,404
Do	Guyot	4,426
Tree	U. S. C. & G. S	1,045
Trenton	Ala. G. S. R. R	739
Tugaloo	A. & R. A. L. R. R	650
Tunnel Hill	W. & A. R. R	853
Union Point	Ga. R. R	658
Vernon	A. C. R. R	176
Vining Station	W. & A. R. R	951
Walker Mountain	U. S. C. & G. S	2,593
Ward's Station	S. W. R. R	394
Waresboro'	B. & A. R. R	117
Warrenton	Ga. R. R	506
Way Cross	B. & A. R. R	100
West Bowersville	Elberton R. R	916
West Point	A. & W. P. R. R	584
Whitfield	A. & W. P. R. R	757
Willacoochee	B. & A. R. R	220
Winchester	S. W. R. R	465
Winters	Ga. R. R	800
Woodstock	M. & N. G. R. R	987
Woodville	Ga. R. R	707
Youah	U. S. C. & G. S	3,167

IDAHO.

Station.	Authority.	Elevation.
		Feet.
Algoma	N. P. R. R	2,214
American Falls	Wheeler	4,457
Anderson's	Wheeler	4,492
Antelope Peak	Wheeler	7,282
Ariomo	U. & N. R. R	4,659
Badger Peak	Wheeler	6,389
Bannock Peak	Wheeler	8,359
Battle Creek	U. & N. R. R	4,500
Bear Lake	Wheeler	5,960
Bear River Bridge	Hayden	5,744
Beaver Cañon Stage Station	Pre. R. R. levels	5,925
Beer Springs	Hayden	5,529
Do	Lander	5,850
Bennington	Hayden	5,708
Do	Wheeler	6,132
Big Butte	Wheeler	7,659
Blackfoot	U. & N. R. R	4,515
Blackfoot Fork, Bridge	Hayden	4,456
Blackfoot Peak	Hayden	7,490
Blackfoot Stage Station	Wheeler	4,447
Black Pine Mountain	Wheeler	9,386
Black Rock Stage Station	Wheeler	4,589
Bloomington	Wheeler	6,076
Do	Hayden	5,985
Bloomington Peak	Wheeler	9,354
Boisé City, Signal Station	U. S. Signal Office	2,768
Boisé, Fort		1,998
Cache Peak	Wheeler	10,451
Camas Creek Ranch	Hayden	4,722
Caribou Mountain	Hayden	9,854
Carpenter's Station	Hayden	4,666
Castle Rock	Wheeler	9,610
Cedar Peak	Wheeler	7,587
Chilco	N. P. R. R	2,450
Citadel Peak	King	6,700
Clarkston	Wheeler	4,853
Clifton	Wheeler	4,926
Do	Hayden	4,893
Coeur d'Aléne Lake	Mullan	2,150
Do	Pacific R. R. Reports	2,240
Coeur d'Aléne Mission	Pacific R. R. Reports	2,280
Crater Buttes, mouth Henry's Fork	Hayden	E. 5,638 W. 5,425
Curlew	Wheeler	4,397
Deep Creek Mountain	Wheeler	8,818
Desert Wells	Hayden	4,816
Devil's Corral	Wheeler	3,601
Dry Creek Station	Hayden	5,689
Eagle Peak	Mullan	7,500
Eagle Rock	U. & N. R. R	4,723
Eagle Rock, Signal Station	U. S. Signal Office	4,781
East Malade Mountain	Hayden	9,332
Elkhorn Mail Station	Wheeler	4,998
Elkhorn Village	Wheeler	4,950
Emigrant Springs	Wheeler	5,271
Fish Haven	Wheeler	5,963
Do	Hayden	5,932
Florence		8,000

Station.	Authority.	Elevation.
		Feet.
Fly Spring	Wheeler	5,912
Fountain Peak (north side)	Wheeler	8,900
Fountain Spring	Wheeler	5,235
Franklin	U. & N. R. R	4,513
Do	Wheeler	4,585
Do	Hayden	4,516
Garfield, Mount	Hayden	9,704
Georgetown	Wheeler	6,019
Do	Hayden	5,800
Georgetown Peak	Hayden	8,466
Granite	N. P. R. R	2,290
Hall, Fort (10 feet below adjutant's office)	Wheeler	4,752
Do	Hayden	4,754
Hall, Fort (old)		4,500
Hall	De Lacy	4,996
Harkness's Toll Gate	Wheeler	4,802
Henry's Lake	Hayden	6,443
Higham's Ranch	Hayden	4,601
Hitching's Ranch	Wheeler	5,205
Junction Station	Hayden	6,329
Kalispelm, Lake	Toner	2,093
Keenam City	Wheeler	6,641
Keeney's Stage Station	Hayden	4,933
Lane's Butte	Wheeler	7,823
Lane's Ranch, Marsh Lake	Wheeler	4,323
Liberty	Hayden	6,060
Do	Wheeler	6,105
Lone Cone	Hayden	9,246
McCrae's Ranch	Wheeler	4,331
Malade City	Hayden	4,700
Do	Wheeler	4,663
Malade Divide	Hayden	5,690
Malade Spring	Wheeler	5,150
Market Lake	U. & N. R. R	4,792
Do	Hayden	4,795
Marsh Cone	Hayden	7,663
Meade Peak	Wheeler	10,541
Montpelier	Hayden	5,793
Montpelier (co-operative store)	Wheeler	5,936
Mormon Salt Works	Wheeler	6,598
Morristown	Wheeler	5,716
Do	Hayden	5,700
Mound Spring Station		4,429
Mule Spring, head of Gentile Valley	Wheeler	5,245
Newton	Hayden	4,500
Nine Mile	U. & N. R. R	4,756
North Soda Peak	Hayden	9,413
Oneida	Hayden	5,700
Oneida Salt Works	Wheeler	6,341
Do	Hayden	6,300
Ovid	Wheeler	6,022
Oxford	U. & N. R. R	4,774
Do	Hayden	4,862
Do	Wheeler	4,866
Oxford, Mount	Wheeler	9,386
Packer's Bridge	Hayden	4,500
Paris	Wheeler	6,018
Paris Peak	Hayden	9,522
Pend d'Oreille, Lake	Petermann	2,093
Do	N. P. R. R	2,059
Pillar Butte	Wheeler	5,301
Pisgah, or Caribou, Mount	Wheeler	9,695
Pleasant Valley Station	Hayden	6,086

Station.	Authority.	Elevation.
		Feet.
Pocatello	U. & N. R. R.	4,495
Do....Stage Station	Hayden	4,512
Do....Stage Station	Wheeler	4,620
Portage	Wheeler	4,700
Port Neuf	U. & N. R. R.	4,514
Prescott	N. P. R. R.	2,210
Preuss, Mount	Hayden	9,979
Putnam, Mount	Wheeler	8,905
Do	Hayden	8,933
Raft River Range	King	7,000
Raft River Stage Station	Wheeler	5,041
Red Rock Gap	Hayden (railroad levels)	4,792
Red Rock Ranch	Hayden	4,792
Rice's Ferry, Snake River	Wheeler	4,192
Rice's Ranch	Wheeler	4,723
Richardson's	Wheeler	5,268
Richmond	Wheeler	4,656
Ross Fork Indian Agency	Hayden	4,394
Do	Wheeler	4,545
Ross Fork Station	U. & N. R. R.	4,561
Saint Charles	Hayden	5,932
Saint George	Hayden	5,771
Salmon City	De Lacy	4,030
Samaria	Wheeler	4,561
Do	Hayden	4,800
Sandpoint	N. P. R. R.	2,100
Sand Ridge	U. & N. R. R.	4,723
Sawtelle's Peak	Hayden	10,013
Sedgwick Peak	Wheeler	9,207
Shadow Lake	Wheeler	4,310
Sherman, Mount	Wheeler	9,572
Shoshone	U. & N. R. R.	4,587
Snake River Plains		4,000–4,500
Snow Mountain	Hayden	9,269
Soda Peak	Hayden	9,683
Soda Springs	Hayden	5,779
Do	Wheeler	5,778
Sohon Pass	Mullan	5,100
Stahn's Ranch	Wheeler	4,403
Do	Wheeler	6,057
Stevens, Mount	Petermann	7,400
Stevenson's Junction, Lemhi Valley	De Lacy	6,084
Stoner's Station		4,621
Sublette	Wheeler	5,155
Swan Lake	U. & N. R. R.	4,794
Switzer's Ranch	Wheeler	4,509
Taylor's Bridge	Hayden	4,627
Ten-mile Spring	Wheeler	5,548
Toponce Ranch	Wheeler	5,072
West Malade, Mount	Hayden	9,220
Weston	Wheeler	5,011
Wiesner, Mount	Mullan	6,000

ILLINOIS.

Station.	Authority.	Elevation.
		Feet.
Addieville	St. L. & S. E. R. R	467
Allendale	C. & V. R. R.	464
Altamont (crs'ng) St. L., V., T. H. & I. R. R.)	O. & M. R. R	616
Alton	C. & A. R. R.	470
Amboy	Ill. Cent. R. R	733
America	C. & V. R. R	344
Antioch	I., D. & S. R. R	661
Antioch (geodetic station)	U. S. Lake Survey	861
Arcola	Ill. Cent. R. R	674
Ashby	St. L. & S. E. R. R	554
Ash Grove (geodetic station)	U. S. Lake Survey	666
Ashkum	Ill. Cent. R. R	600
Ashland	O. & M. R. R	625
Ashley	Ill. Cent. R. R	549
Atlanta	C. & A. R. R	744
Atwater (or Zanesville)	J. S. E. R. R	652
Atwood	I., D. & S. R. R	669
Auburn	C. & A. R. R	666
Aurora	C., B. & Q. R. R	649
Badgley	St. L. & S. E. R. R	536
Baland (3¼ miles east of Omaha)	O. & M. R. R	458
Bardstown, (crossing R., R. I. & St. L. R. R).	O. & M. R. R	435
Barnett	J. S. E. R. R	672
Barnhill (valley of Watson's Creek)	O. & M. R. R	385
Barry	H. & N. R. R	670
Bartley	O. & M. R. R	386
Bayliss	H. & N. R. R	869
Beardstown (surface of Illinois River)	Mich. & Ill. Canal	423
Beaucoup	St. L. & S. E. R. R	538
Beecher	O. & M. R. R	610
Belle Air (geodetic station)	U. S. Lake Survey	588
Belleville	B. & S. Ill. R. R	479
Benton	B. & E. R. R	485
Benton (geodetic station)	U. S. Lake Survey	595
Bethany	P., D. & E. R. R	665
Big Rattlesnake	C. & St. L. R. R	405
Birkner	St. L. & S. E. R. R	499
Birkner (summit)	St. L. & S. E. R. R	568
Birkner (surface ground)	St. L. & S. E. R. R	583
Blandinsville	T., P. & W. R. R	730
Bloom	J. & N. Ind. R. R	688
Bloomfield (summit)	C. & V. R. R	405
Bloomfield (surface ground)	C. & V. R. R	430
Bloomington	Ill. Cent. R. R	823
Bluff City	St. L., V. & T. H. R. R	505
Braceville	C. & A. R. R	603
Bradford	O. & M. R. R	581
Breeds	T., P. & W. R. R	491
Brighton	C. & A. R. R	694
Broadwell	C. & A. R. R	611
Buda	C. B. & Q. R. R	768
Bureau Junction	P. K. & P. R. R	455
Burnside	T. P. & W. R. R	638
Bushnell	C. B. & Q. R. R	664
Butler, Geodetic Station	U. S. Lake Survey	787
Cahoka	C. & St. L. R. R	425
Cairo	Ill. Cent. R. R	322
Do. Ohio River, high water	C. & V. R. R	320

Station.	Authority.	Elevation.
		Feet.
Cairo Ohio River, low water		272
Do....railroad track on Commercial ave		312
Do....Signal Station	U. S. Signal Office	377
Caledonia	C. & V. R. R	353
Calumet	Ill. Cent. R. R	591
Camargo	I. D. & S. R. R	638
Cambridge	P. & R. I. R. R	778
Camp Point (T. W. & W. Junction)	C. B. &. Q. R. R	740
Canton	T. P. & W. R. R	656
Carbondale	Ill. Cent. R. R	394
Carlinville	C. & A. R. R	660
Carlyle, station ledge under window of E. face of C. H. B. M. on	U. S. C. & G. S	470
Carlyle	O. & M. R. R	450
Carmi	St. L. & S. E. R. R	401
Carthage	C. B. & Q. R. R	686
Casey	St. L., V. & T. H. R. R	649
Casey, Geodetic Station	U. S. Lake Survey	631
Caseyville	St. L., V. & T. H. R. R	432
Casner	I. D. & S. R. R	604
Cayuga	C. & A. R. R	703
Centerville	Ill. & St. L. R. R	379
Centralia	Ill. Cent. R. R	494
Champaign	Ill. Cent. R. R	732
Do....Signal Station	U. S. Signal Office	768
Chatham	C. & A. R. R	642
Chatsworth	T. P. & W. R. R	732
Chenoa	T. P. & W. R. R	724
Cherry Point	I. D. & S. R. R	649
Chicago, city base	U. S. Lake Survey	580
Do....C. & N. W. R. R. Station	City Engineer	590
Do....N. Ind. L. S. & M. S., and C. R. I. & P. R. R. Station	City Engineer	593
Do....P. F. W. and A. & St. L. R. R. Station	City Engineer	589
Do....Ill. Cent. & Mich. Cent. R. R. Station	City Engineer	589
Do....Signal Station	U. S. Signal Office	661
Chrisman	I. D. & S. R. R	644
Cisne	O. & M. R. R	460
Claremont, Geodetic Station	U. S. Lake Survey	606
Clifton	Ill. Cent. R. R	644
Do. Geodetic Station	U. S. Lake Survey	662
Clinton	Ill. Cent. R. R	727
Coles	P. D. & E. R. R	666
Collinsville	St. L., V. & T. H. R. R	465
Do.....plank road	St. L., V. & T. H. R. R	417
Coultersville	B. & S. Ill. R. R	542
Crete, Geodetic Station	U. S. Lake Survey	791
Cuba	T. P. & W. R. R	674
Cumberland	St. L., V. & T. H. R. R	641
Cypress Junction	O. & M. R. R	363
Cypress Pond	C. & V. R. R	340
Dahlgren	St. L. & S. E. R. R	508
Dalton	C. & E. Ill. R. R	604
Danville	W. St. L. & P. R. R	608
Do..Junction	C. & E. Ill. R. R	610
Decatur	Ill. Cent. R. R	666
Delafield	St. L. & S. E. R. R	427
Denver, Geodetic Station	U. S. Lake Survey	544
Disco	T. P. & W. R. R	663
Dixon	Ill. Cent. R. R	718
Drivers	St. L. & S. E. R. R	443

Station.	Authority.	Elevation.
		Feet.
Duquoin	B. & S. Ill. R. R	459
Do	B. & E. R. R	475
Dwight	P. K. & P. R. R	609
Dyke	Ill. & St. L. R. R	369
East Saint Louis, Relay House	City engineer, based on height of Saint Louis directrix	418
Do.....large bronze plate in south face east land pier of Great Bridge, B. M. on	U. S. C. & G. S	416
Edgewood	Ill. Cent. R. R	572
Edwards	C. B. & Q. R. R	650
Effingham	Ill. Cent. R. R	588
Eldorado	C. & V. R. R	384
Elgin, crossing of R. R	Mich. & Ill. Canal	700
Elkhart	C. & A. R. R	617
Elmwood	C. B. & Q. R. R	621
El Paso	Ill. Cent. R. R	742
Elvaston	T. P. & W. R. R	663
Elwood	C. & A. R. R	660
Enfield, junction S. & S. E. R. R	St. L. & S. E. R. R	458
Do .old town	O. & M. R. R	463
Englewood	L. S. & M. S. R. R	604
Ewington	St. L., V. & T. H. R. R	559
Do...(surface)		574
Fairburg	T. P. & W. R. R	697
Fairfield	O. & M. R. R	538
Fairmount, Geodetic Station	U. S. Lake Survey	704
Farmingdale	O. & M. R. R	583
Farina	Ill. Cent. R. R	571
Ferris	T. P. & W. R. R	677
Flora	O. & M. R. R	495
Flora, front basement window south-east corner public school building, B. M. on	U. S. C. & G. S	491
Foreston	C. & I. R. R	941
Forrest	T. P. & W. R. R	678
Fountain Bluff	D. & S. W. R. R	349
Frankfort	J. & N. Ind. R. R	755
Franklin	J. S. E. R. R	696
Freeburg	B. & S. Ill. R. R	514
Freeport	Ill. Cent. R. R	759
French Village	St. L. & S. E. R. R	441
Do.....(surface ground)		437
Frennington	St. L., V. & T. H. R. R	595
Funk's Grove	C. & A. R. R	730
Galena	Ill. Cent. R. R	601
Galesburg	C. B. & Q. R. R	788
Galva	C. B. & Q. R. R	851
Garden, Geodetic Station	U. S. Lake Survey	800
Gardner	C. & A. R. R	605
Gilman	Ill. Cent. R. R	652
Gilmore	O. & M. R. R	573
Gilson	C. B. & Q. R. R	690
Girard	J. S. E. R. R	687
Glasford	T. P. & W. R. R	605
Godfrey	C. & A. R. R	635
Good Hope	T. P. & W. R. R	705
Goodson	I. D. & S. R. R	670
Grand Tower	D. & S. W. R. R	352
Grant, Geodetic Station	U. S. Lake Survey	716
Grayville	C. & V. R. R	393
Greenup	St. L., V. & T. H. R. R	351
Greenville	St. L., V. & T. H. R. R	555

Station.	Authority.	Elevation.
		Feet.
Gridley	T. P. & W. R. R	758
Griggsville	H. & N. R. R	685
Groveland Park	Ill. & St. L. R. R	523
Guerpert's Pass	C. & St. L. R. R	472
Hadley	H. & N. R. R	752
Hammond	I. D. & S. R. R	672
Hampton	P. D. & E. R. R	665
Harmony	Ill. & S. L. R. R	563
Harrisburg	C. & V. R. R	367
Havana	P. P. & J. R. R	472
Hawthorne	St. L. & S. E. R. R	395
Hennepin	P. K. & P. R. R	394
Hervey City	P. D. & E. R. R	707
Highland	St. L., V. & T. H. R. R	527
Do...(surface)	St. L., V. & T. H. R. R	543
Hinckley	C. & I. R. R	746
Hollidays	O. & M. R. R	597
Hollis	T. P. & W. R. R	451
Hoopestown	C. & E. Ill. R. R	718
Howard's Point	St. L., V. & T. H. R. R	612
Hull's Crossing Q. A. & St. L. R. R	H. & N. R. R	468
Hume	I. D. & S. R. R	649
Hunt City, Geodetic Station	U. S. Lake Survey	551
Indian Creek Valley	O. & M. R. R	393
Indian Lake, water	St. L., V. & T. H. R. R	402
Do.....railroad station	St. L., V. & T. H. R.R	416
Iowa	T. P. & W. R. R	546
Jacksonville	J. S. E. R. R	619
Joliet	C. & A. R. R	541
Do. Des Moines River	Mich. & Ill. Canal	543
Jonesboro	Ill. Cent. R. R	631
Kankakee	Ill. Cent. R. R	626
Do...Geodetic Station	U. S. Lake Survey	642
Kansas, Geodetic Station	U. S. Lake Survey	839
Keithsburgh	C. B. & Q. R. R	543
Keithsburgh Junction	C. B. & Q. R. R	567
Kensington	M. C. R. R	596
Kinderhook	H. & N. R. R	478
Kingston (B. & O. R. R. shops)	B. P. & C. R. R	588
Knoxville	C. B. & Q. R. R	777
La Harpe	T. P. & W. R.	687
Lake	St. L., V. & T. H. R. R	466
Lakewood	O. & M. R. R	618
La Place	I. D. & S. R. R	702
Larkinsburg	O. & M. R. R	519
La Salle	Ill. Cent. R. R	510
Do..surface of Illinois River	Mich. & Ill. Canal	439
Lawrenceville	D. & S. W. R. R	424
Laws	Ill. & St. L. R. R	539
Lebanon—sill of basement window east face public school, B. M. on	U. S. C. & G. S	460
Lebanon	O. & M. R.R	441
Lena	Ill. Cent. R. R	959
Leoville	T. P. & W. R. R	499
Lexington	C. & A. R. R	751
Lincoln	C. & A. R. R	613
Litchfield	J. S. E. R. R	464
Loda	Ill. Cent. R. R	777
Long Creek	I. D. & S. R. R	673
Losant	P. K. & P. R. R	668
Louisville	O. & M. R.R	480
Lowder	J. S. E. R. R	712
Lowndale	C. & A. R. R	625
Ludlow	Ill. Cent. R. R	767

Station.	Authority.	Elevation.
		Feet.
Lynn Grove, Geodetic Station	U. S. Lake Survey	772
McLean	C. & A. R. R	730
McLeansboro	St. L. & S. E. R. R	500
Macon	Ill. Cent. R. R	716
McVey	J. S. E. R. R	666
Manteno, Geodetic Station	U. S. Lake Survey	711
Mapleton	T. P. & W. R. R	463
Maquon	C., B. & Q. R. R	630
Marshall	D. & S. W. R. R	619
Martinsville, Geodetic Station	U. S. Lake Survey	678
Do	St. L., V. & T. H. R. R	573
Marysville	H. & N. R. R	728
Mascoutah	St. L. & S. E. R. R	425
Mattison	Ill. Cent. R. R	699
Mattoon	Ill. Cent. R. R	733
Mayview, Geodetic Station	U. S. Lake Survey	706
Meadows	T. P. & W. R. R	764
Mendota	Ill. Cent. R. R	749
Metcalf	I. D. & S. R. R	618
Michigan City, Geodetic Station	U. S. Lake Survey	730
Michigan Lake, surface of	P., Ft. W. & C. R. R	582
Millersville	O. & M. R. R	642
Mill Shoals	O. & M. R. R	384
Moccasin Station	O. & M. R. R	606
Momence	P. K. & P. R. R	625
Monee	Ill. Cent. R. R	796
Morgan Park, Geodetic Station	U. S. Lake Survey	666
Moser Station	St. L. & S. E. R. R	473
Mound City	C. & V. R. R	323
Do.....surface ground		318
Mound, Geodetic Station	U. S. Lake Survey	522
Mounds	Ill. Cent. R. R	346
Mount Carbon	D. & S. W. R. R	372
Mount Morris	C. & I. R. R	906
Mount Vernon	St. L. & S. E. R. R	506
Mount Zion	P. D. & E. R. R	694
Murdock	I. D. & S. R. R	639
Murphysboro	C. & St. L. R. R	425
Naples	H. & N. R. R	438
Do. surface of Illinois River at crossing of railroad	Mich. & Ill. Canal	418
Nashville	St. L. & S. E. R. R	503
Nelson	P. D. & E. R. R	657
New Athens	B. & S. Ill. R. R	404
New Boston	C. B. & Q. R. R	573
Newman	I. D. & S. R. R	641
New Memphis	St. L. & S. E. R. R	411
New Philadelphia	T. P. & W. R. R	664
New Salem	H. & N. R. R	778
Norris City	C. & V. R. R	420
Do....crossing C. & V. R. R	O. & M. R. R	424
Oak Hill	C. B. & Q. R. R	597
Oakland, Geodetic Station	U. S. Lake Survey	693
Oakwood	Ill. Cent. R. R	585
Oblong, Geodetic Station	U. S. Lake Survey	505
Ocoya	C. & A. R. R	691
Odell	C. & A. R. R	726
Odin Station, coping-stone east end of a long, arched culvert, B. M. on	U. S. C. & G. S	529
Odin	Ill. Cent. R. R	525
O'Fallon	O. & M. R. R	545
Okawville	St. L. & S. E. R. R	450
Olney, base of one of the columns of north face of C. H., B. M. on	U. S. C. & G. S	487

Station.	Authority.	Elevation.
		Feet.
Olney, near southeast corner of grounds of public school at B. M.	U. S. C. & G. S	482
Olney	O. & M. R. R	480
Omaha	O. & M. R. R	369
Onion Hill, Geodetic Station	U. S. Lake Survey	569
Opdyke	St. L. & S. E. R. R	509
Oregon	C. & I. R. R	704
Orion	P. & R. I. R. R	751
Orland, Geodetic Station	U. S. Lake Survey	768
Ottawa	C. B. & Q. R. R	486
Do. surface of Illinois River at mouth Fox River	Mich. & Ill. Canal	448
Owaneco	O. & M. R. R	616
Palermo, Geodetic Station	U. S. Lake Survey	742
Pana	Ill. Cent. R. R	676
Paris	D. & S. W. R. R	705
Parkersburg, Geodetic Station	U. S. Lake Survey	569
Paxton, Geodetic Station	U. S. Lake Survey	804
Pekin	P. P. & J. R. R	475
Peoria	T. P. & W. R. R	463
Do. Adams Street Depot	C. R. I. & P. R. R	458
Do. surface of Illinois River	Mich. & Ill. Canal	433
Peru, surface of Illinois River	Mich. & Ill. Canal	439
Philadelphia	O. & M. R. R	616
Philips Ferry	H. & N. R. R	439
Pilot Grove, Geodetic Station	U. S. Lake Survey	780
Pinckneyville	B. & S. Ill. R. R	444
Pisgah	J. S. E. R. R	687
Plateau	St. L., V. & T. H. R. R	568
Pleasant Plains	O. & M. R. R	606
Pleasantville	St. L., V. & T. H. R. R	585
Pocahontas	St. L., V. & T. H. R. R	498
Polo	Ill. Cent. R. R	849
Pontiac	C. & A. R. R	668
Princeville	P. & R. I. R. R	719
Prospect	J. S. E. R. R	685
Queen's Lake, railroad track	St. L. & S. E. R. R	408
Do high water	St. L. & S. E. R. R	401
Do bed	St. L. & S. E. R. R	379
Quincy	C. B. & Q. R. R	488
Rantoul, Geodetic Station	U. S. Lake Survey	821
Redbud	C. & St. L. R. R	457
Richland	O. & M. R. R	605
Ridge Farm	D. & S. W. R. R	685
Ridgway	O. & M. R. R	379
Rinard	O. & M. R. R	457
Roaches	St. L. & S. E. R. R	498
Robinson	D. & S. W. R. R	508
Rochelle	C. & I. R. R	807
Rochester	O. & M. R. R	569
Rock Island	C., R. I. & P. R. R	584
Do	R. R. I. & St. L. R. R	583
Rushville	C. B. & Q. R. R	676
Sacramento, Bear Creek Valley	O. & M. R. R	413
Saint Anne, I. C. & L. R. R	C. & E. Ill. R. R	659
Do Geodetic Station	U. S. Lake Survey	676
Saint Francisville	C. & V. R. R	458
Saint Jacobs	St. L., V. & T. H. R. R	605
Salem	O. & M. R. R	538
Do. center of crossing southwest corner of C. H., B. M. on	U. S. C. & G. S	546
Saline City, railroad track	C. & V. R. R	409
Sanburn, railroad track	C. & V. R. R	609
Sandoval	Ill. Cent. R. R	494

Station.	Authority.	Elevation.
		Feet.
Sand Ridge	D. & S. W. R. R	351
Sangamon	I. D. & S. R. R	632
Sciota	T. P. & W. R. R	748
Scotland	I. D. & S. R. R	629
Scottsburg	T. P. & W. R. R	677
Shawneetown, high water in Ohio River 1867	O. & M. R. R	363
Shawneetown Junction	St. L. & S. E. R. R	486
Sheldon	T. P. & W. R. R	708
Sherman	C. & A. R. R	609
Shipman	C. & A. R. R	662
Shirley	C. & A. R. R	770
Smithfield	T. P. & W. R. R	645
South Chicago	L. S. & M. S. R. R	591
Do	P., Ft. W. & C. R. R	589
South Chicago Avenue	B. P. & C. R. R	587
Sparta	C. & St. L. R. R	549
Spencer	J. & N. Ind. R. R	712
Spring Creek, Geodetic Station	U. S. Lake Survey	666
Springertown	O. & M. R. R	382
Springfield, O. & M. & Illinois Central Station	O. & M. R. R	589
Springfield, W., St. L. & P. Station		594
Do.....crossing C. A. & St. L. R. R. at S. Grand Avenue	O. & M. R. R	592
Springfield, C. A. & St. L. depot	O. & M. R. R	582
Do	O. & M. R. R	545
Do.....Signal Station	U. S. Signal Office	644
Steele	P. D. & E. R. R	667
Streator	C., B. & Q. R. R	620
Streator	P., K. & P. R. R	600
Sullivan, W., St. L. & P. Crossing	P., D. & E. R. R	698
Sumner	O. & M. R. R	457
Swanwick	B. & S. Ill. R. R	572
Tenpin	P., D. & E. R. R	682
Teutopolis	St. L., V. & T. H. R. R	605
Thackery	St. L., & S. E. R. R	505
Thorn Thicket	O. & M. R. R	383
Tilden	B. & S. Ill. R. R	523
Tilton Junction	D. & S. W. R. R	673
Tolono	Ill. Cent. R. R	729
Toulon	P. & R. I. R. R.	723
Towanda	C. & A. R. R	810
Trenton	O. & M. R. R	500
Troy	St. L., V. & T. H. R. R	539
Trumbull	St. L. & S. E. R. R	460
Tuscola	Ill. Cent. R. R	657
Ullin	Ill. Cent. R. R	338
Union	P., P. & J. R. R	505
Unity	C. & St. L. R. R	332
Vandalia	Ill. Cent. R. R	500
Do..Crossing, Ill. Cent. R. R	St. L., V. & T. H. R. R	500
Venedy	St. L. & S. E. R. R	412
Virden	J. S. E. R. R	691
Virginia	O. & M. R. R	608
Warren	Ill. Cent. R. R	1,005
Do. Geodetic Station	U. S. Lake Survey	730
Washington	T., P. & W. R. R	745
Waterloo	C. & St. L. R. R	664
Watseka	T., P. & W. R. R	627
Do..Geodetic Station	U. S. Lake Survey	670
Waverly	J. S. E. R. R	691
West Chicago	C., B. & Q. R. R	591
Westfield, Geodetic Station	U. S. Lake Survey	773
White's Hill	O. & M. R. R	420

Station.	Authority.	Elevation.
		Feet.
Olney, near southeast corner of grounds of public school at B. M.	U. S. C. & G. S	482
Olney	O. & M. R. R	480
Omaha	O. & M. R. R	369
Onion Hill, Geodetic Station	U. S. Lake Survey	569
Opdyke	St. L. & S. E. R. R	509
Oregon	C. & I. R. R	704
Orion	P. & R. I. R. R	751
Orland, Geodetic Station	U. S. Lake Survey	768
Ottawa	C. B. & Q. R. R	486
Do. surface of Illinois River at mouth Fox River	Mich. & Ill. Canal	448
Owaneco	O. & M. R. R	616
Palermo, Geodetic Station	U. S. Lake Survey	742
Pana	Ill. Cent. R. R	676
Paris	D. & S. W. R. R	705
Parkersburg, Geodetic Station	U. S. Lake Survey	569
Paxton, Geodetic Station	U. S. Lake Survey	804
Pekin	P. P. & J. R. R	475
Peoria	T. P. & W. R. R	463
Do. Adams Street Depot	C. R. I. & P. R. R	458
Do. surface of Illinois River	Mich. & Ill. Canal	433
Peru, surface of Illinois River	Mich. & Ill. Canal	439
Philadelphia	O. & M. R. R	616
Philips Ferry	H. & N. R. R	439
Pilot Grove, Geodetic Station	U. S. Lake Survey	780
Pinckneyville	B. & S. Ill. R. R	444
Pisgah	J. S. E. R. R	687
Plateau	St. L., V. & T. H. R. R	568
Pleasant Plains	O. & M. R. R	606
Pleasantville	St. L., V. & T. H. R. R	585
Pocahontas	St. L., V. & T. H. R. R	498
Polo	Ill. Cent. R. R	849
Pontiac	C. & A. R. R	668
Princeville	P. & R. I. R. R	719
Prospect	J. S. E. R. R	685
Queen's Lake, railroad track	St. L. & S. E. R. R	409
Do ..... high water	St. L. & S. E. R. R	401
Do ..... bed	St. L. & S. E. R. R	379
Quincy	C. B. & Q. R. R	488
Rantoul, Geodetic Station	U. S. Lake Survey	821
Redbud	C. & St. L. R. R	457
Richland	O. & M. R. R	605
Ridge Farm	D. & S. W. R. R	685
Ridgway	O. & M. R. R	379
Rinard	O. & M. R. R	457
Roaches	St. L. & S. E. R. R	498
Robinson	D. & S. W. R. R	508
Rochelle	C. & I. R. R	807
Rochester	O. & M. R. R	569
Rock Island	C., R. I. & P. R. R	584
Do	R. R. I. & St. L. R. R	583
Rushville	C. B. & Q. R. R	676
Sacramento, Bear Creek Valley	O. & M. R. R	413
Saint Anne, I. C. & L. R. R	C. & E. Ill. R. R	659
Do ..... Geodetic Station	U. S. Lake Survey	676
Saint Francisville	C. & V. R. R	458
Saint Jacobs	St. L., V. & T. H. R. R	605
Salem	O. & M. R. R	538
Do. center of crossing southwest corner of C. H., B. M. on	U. S. C. & G. S	546
Saline City, railroad track	C. & V. R. R	409
Sanburn, railroad track	C. & V. R. R	609
Sandoval	Ill. Cent. R. R	494

Station.	Authority.	Elevation.
		Feet.
Sand Ridge	D. & S. W. R. R	351
Sangamon	I. D. & S. R. R	632
Sciota	T. P. & W. R. R	748
Scotland	I. D. & S. R. R	629
Scottsburg	T. P. & W. R. R	677
Shawneetown, high water in Ohio River 1867	O. & M. R. R	363
Shawneetown Junction	St. L. & S. E. R. R	486
Sheldon	T. P. & W. R. R	706
Sherman	C. & A. R. R	609
Shipman	C. & A. R. R	662
Shirley	C. & A. R. R	770
Smithfield	T. P. & W. R. R	645
South Chicago	L. S. & M. S. R. R	591
Do	P., Ft. W. & C. R. R	589
South Chicago Avenue	B. P. & C. R. R	587
Sparta	C. & St. L. R. R	549
Spencer	J. & N. Ind. R. R	712
Spring Creek, Geodetic Station	U. S. Lake Survey	666
Springertown	O. & M. R. R	382
Springfield, O. & M. & Illinois Central Station	O. & M. R. R	589
Springfield, W., St. L. & P. Station		594
Do.....crossing C. A. & St. L. R. R. at S. Grand Avenue	O. & M. R. R	592
Springfield, C. A. & St. L. depot	O. & M. R. R	582
Do	O. & M. R. R	545
Do.....Signal Station	U. S. Signal Office	644
Steele	P. D. & E. R. R	667
Streator	C., B. & Q. R. R	620
Streator	P., K. & P. R. R	600
Sullivan, W., St. L. & P. Crossing	P., D. & E. R. R	698
Sumner	O. & M. R. R	457
Swanwick	B. & S. Ill. R. R	572
Tenpin	P., D. & E. R. R	682
Teutopolis	St. L., V. & T. H. R. R	605
Thackery	St. L., & S. E. R. R	505
Thorn Thicket	O. & M. R. R	383
Tilden	B. & S. Ill. R. R	523
Tilton Junction	D. & S. W. R. R	673
Tolono	Ill. Cent. R. R	729
Toulon	P. & R. I. R. R.	723
Towanda	C. & A. R. R	810
Trenton	O. & M. R. R	500
Troy	St. L., V. & T. H. R. R	539
Trumbull	St. L. & S. E. R. R	460
Tuscola	Ill. Cent. R. R	657
Ullin	Ill. Cent. R. R	338
Union	P., P. & J. R. R	505
Unity	C. & St. L. R. R	332
Vandalia	Ill. Cent. R. R	500
Do..Crossing, Ill. Cent. R. R	St. L., V. & T. H. R. R	500
Venedy	St. L. & S. E. R. R	412
Virden	J. S. E. R. R	691
Virginia	O. & M. R. R	608
Warren	Ill. Cent. R. R	1,005
Do.Geodetic Station	U. S. Lake Survey	730
Washington	T., P. & W. R. R	745
Waterloo	C. & St. L. R. R	664
Watseka	T., P. & W. R. R	627
Do..Geodetic Station	U. S. Lake Survey	670
Waverly	J. S. E. R. R	691
West Chicago	C., B. & Q. R. R	591
Westfield, Geodetic Station	U. S. Lake Survey	773
White's Hill	O. & M. R. R	420

Station.	Authority.	Elevation.
		Feet.
Williamsville	C. & A. R. R.	627
Willow Springs, Geodetic Station	U. S. Lake Survey	729
Wilmington	C. & A. R. R.	561
Woodbury	St. L., V. & T. H. R. R.	559
Woodlawn	St. L. & S. E. R. R.	495
Woodlyn	J. S. E. R. R.	701
Yates City	C. B. & Q. R. R.	673
York	Ill. & St. L. R. R.	524

INDIANA.

Station.	Authority.	Elevation.
Acton	C., I., St. L. & C. R. R	792
Adams	C., I., St. L. & C. R. R	880
Do..ground, intersection with Pittsburg road	C., R. & Ft. W. R. R	796
Adamsboro	Eel R. R. R	665
Albion	B., P. & C. R. R	927
Alexandria	L. E. & W. R. R	857
Do....L. E. & W. Crossing	C., W. & M. R. R	872
Ambia	L. E. & W. R. R	710
Amboy	Pan Handle R. R	810
Amity	J., M. & I. R. R	693
Amo	T. H. & Inds. R. R	820
Anderson	C., C., C. & I. R. R	880
Do...Crossing	C., C., C. & I. R. R	894
Do...P., C. & St. L. Crossing	C., W. & M. R. R	900
Do...C., C., C. & I. Junction	C., W. & M. R. R	894
Angola	Ft. W., J. & S. R. R	1,052
Anoka Junction	Pan Handle R. R	696
Arcola	P., Ft. W. & C. R. R	833
Arta	I., B. & W. R. R	1,190
Atherton	E., T. H. & C. R. R	522
Attica	W., St. L. & P. R. R	540
Do	T., W. & W. R. R	556
Do.bed of Wabash River	T., W. & W. R. R	516
Auburn	Ft. W., J. & S. R. R	872
Do.Junction	Ft. W., J. & S. R. R	868
Aurora	O. & M. R. R	493
Austin	J., M. & I. R. R	549
Avilla	G., R. & Ind. R. R	969
Do.Summit	B., P. & C. R. R	1,015
Baileytown	L. S. & M. S. R. R	635
Bainbridge	L., N. A. & C. R. R	936
Barnard	I., D. & S. R. R	902
Batesville	C., I., St. L. & C. R. R	968
Baton	Ft. W., M. & C. R. R	921
Becknell	Inds. & V. R. R	485
Bedford	L., N. A. & C. R. R	679
Beesons	Ft. W., M. & C. R. R	875
Belknap	St. L. & S. E. R. R	456
Belt Crossing	J., M. & I. R. R	716
Bentonville	J., M. & I. R. R	1,056
Bethany	I., D. & S. R. R	748
Bloomingdale	I., D. & S. R. R	642
Bloomingsport	I., B. & W. R. R	1,225
Bloomington	L., N. A. & C. R. R	742
Blooms	L. E. & W. R. R	933
Blue River	I., B. & W. R. R	980
Bluffton	Ft. W., M. & C. R. R	837
Boonville	L. E. E., & S. W. R. R	391
Boswell	L. E. & W. R. R	734
Bowser	Ft. W., M. & C. R. R	939
Boyleston	L. E. & W. R. R	896
Brandywine	I., B. & W. R. R	905
Brazil	T. H. & Inds. R. R	643
Bridgeport	T. H. & Inds. R. R	748
Brightwood	C., C., C. & I. R. R	791
Brimfield	L. S. & M. S. R. R	945
Bristol	L. S. & M. S. R. R	786
Brooklyn	Inds. & V. R. R	659

Station.	Authority.	Elevat
		F
Brownsville	C., H. & D. R. R	
Bruceville	Inds. & V. R. R	
Bunker Hill	Pan Handle R. R	
Burnettsville	T., P. & W. R. R	
Butler	L. S. & M. S. R. R	
Butlers	J., M. & I. R. R	
Cambridge City	J., M. & I. R. R	
Campbells	Inds. & V. R. R	
Carney's	J., M. & I. R. R	
Cassville	Pan Handle R. R	
Cedar Creek	Eel R. R. R	
Centerton	Inds. & V. R. R	
Chalmers	L., N. A. & C. R. R	
Chandler	L. E., E. & S. W. R. R	
Charlestown	O. & M. R. R	
Chase	L. E. & W. R. R	
Chesterfield	C., C., C. & I. R. R	
Chestertown	L. S. & M. S. R. R	
Chestnut Ridge	J., M. & I. R. R	
Chili	Eel R. R	
Churubusco	Eel R. R	
Circleville	L. E. & W. R. R	
Clarksburgh	T. H. & Inds. R. R	
Clarks Hill	Inds. & La. F. R. R	
Clay City	T. H. & S. E. R. R	
Claypool	C., W. & M. R. R	
Clayton	T. H. & Inds. R. R	
Clifford	J., M. & I. R. R	
Clinton	E., T. H. & C. R. R	
Do. high water in Wabash River	E., T. H. & C. R. R	
Do. low water in Wabash River	E., T. H. & C. R. R	
Cloverdale	L., N. A. & C. R. R	
Cloverland	T. H. & Inds. R. R	
Coal City	T. H. & S. E. R. R	
Coatsville	T. H. & Inds. R. R	
Cochran	O. & M. R. R	
Coldwater, M. & G. R. R. Crossing	Peninsula R. R	
Colfax, crossing C., L. & S. W. R. R	Inds. & La F. R. R	
Collamer	Eel R. R	
Collins	Eel R. R	
Columbia City	P., Ft. W. & C. R. R	
Columbus	J., M. & I. R. R	
Do... branch on White River	J., M. & I. R. R	
Connersville	C., H. & D. R. R	
Converse	Pan Handle R. R	
Corunna	L. S. & M. S. R. R	
Cory	T. H. & S. E. R. R	
Crawfordsville	L., N. A. & C. R. R	
Crothersville	J., M. & I. R. R	
Crown Point Station	Pan Handle R. R	
Curveton	T., P. & W. R. R	
Daleville	C., C., C. & I. R. R	
Dana	I. D. & S. R. R	
Danville	T., W. & W. R. R	
Do.. bed of Vermillion River	T., W. & W. R. R	
Do.. Junction	E., T. H. & C. R. R	
Dayton	L. E. & W. R. R	
Decatur, opposite Station House	C. R. & Ft. W. R. R	
De Forest	L. E., E. & S. W. R. R	
Dixon	Inds. & V. R. R	
Duck Creek	I., B. & W. R. R	1,
Dunlaps	L. S. & M. S. R. R	
Dupont	J., M. & I. R. R	

Station.	Authority.	Elevation.
		Feet.
Duvall	I., B. & W. R. R	885
Dyer	J. & M. Ind. R. R.	635
Early	E., T. H. & C. R. R.	497
Edinburgh	J., M. & I. R. R	674
Edwardsport	Inds. & V. R. R	460
Elizabethtown	J., M. & I. R. R.	646
Elkhart	L. S. & M. S. R. R.	755
Do	C., W. & M. R. R.	741
Ellettsville	L., N. A. & C. R. R	682
Ellis Mills	Inds. & V. R. R.	558
Ellsworth	E., T. H. & C. R. R	488
Elwood	L., E. & W. R. R	858
Engles	T. H. & Inds. R. R	677
English Lake, Kankakee River	P., Ft. W. & C. R. R.	663
Engene	E., T. H. & C. R. R.	507
Evansville	L. E., E. & S. W. R.	378
Do....low water of the Ohio River	W. & E. Canal	326
Fairland	C., I., St. L. & C. R. R	774
Fairmount	C., W. & M. R. R.	893
Falmouth	J., M. & I. R. R	1,048
Farmers	Inds. & V. R. R.	528
Farmland	C., C., C. & I. R. R	1,037
Fergusons	Ft. W., M. & C. R. R.	806
Fillmore	T. H. & Inds. R. R.	844
Five Mile	J., M. & I. R. R.	465
Flat Rock	J., M. & I. R. R.	695
Foresters	L., S. & M. S. R. R	852
Fortville	C., C., C. & I. R. R	857
Fort Wayne	G. R. & Ind. R. R	752
Do ..... city datum	City Engineer	702
Do ..... in front of passenger depot	P., Ft. W. & C. R. R	775
Frankfort	L. E. & W. R. R	841
Franklin	J., M. & I. R. R	732
Do..Martinsville R. R. crossing	J., M. & I. R. R	736
Freedom	Inds. & V. R. R	538
Fremont	Ft. W., J. & S. R. R.	1,055
Do...Geodetic Station	U. S. Lake Survey	1,142
French	I., D. & S. R. R	500
Friendswood	Inds. & V. R. R	738
Furnessville	M. C. R. R.	669
Galena, Geodetic Station	U. S. Lake Survey	958
Gallaudet	C., I., St. L. & C. R. R	852
Garrett City	B., P. & C. R. R.	892
Garvin	L. E., E. & S. W. R. R	378
Gebhard's Station	Pan Handle R. R	762
Gessie	E., T. H. & C. R. R.	616
Gibsons	M. C. R. R	600
Gillman	L. E. & W. R. R.	852
Gings	J., M. & I. R. R	1,000
Goldsmith	L. E. & W. R. R.	903
Goodland	T., P. & W. R. R.	718
Goshen	L. S. & M. S. R. R.	789
Gosport	Inds. & V. R. R	595
Gravel Pit	C., C., C. & I. R. R.	879
Greencastle	T. H. & Inds. R. R.	834
Do.....Junction	L., N. A. & C. R. R	773
Green Fork	I., B. & W. R. R	1,120
Greensburgh	C., I., St. L. & C. R. R	942
Greenville Creek	I., B. & W. R. R	1,165
Greenwood	Ft. W., M. & C. R. R	858
Guilford	C., I., St. L. & C. R. R.	508
Guion	I., D. &S. R. R.	630
Gundrum	Pan Handle R. R	710

Station.	Authority.	Elevat
		F
Hamlet	P., Ft. W. & C. R. R	
Hamricks	T. H. & Inds. R. R	
Harmans	C., I., St. L. & C. R. R	
Harmony	T. H. & Inds. R. R	
Harrodsburgh	L., N. A. & C. R. R	
Harristown	L., N. A. & D. R. R	
Harrisville	C., C., C. & I. R. R	1,
Harford City	Ft. W., M. & C. R. R	
Hart's Crossing	L. E., E. & S. W. R. R	
Hastings	Inds. & V. R. R	
Hebron	Pan Handle R. R	
Henryville	J., M. & I. R. R	
Hillsburgh	L. E. & W. R. R	
Hillsdale	I., D., & S. R. R	
Hobart	P., Ft. W. & C. R. R	
Hobbs	L. E. & W. R. R	
Holmesville	L. S. & M. S. R. R	
Homer	J., M. & I. R. R	
Hubbells	T. H. & S. E. R. R	
Huntertown	G. R. & Inds. R. R	
Huntington	T. W. & W. R. R	
Do..... Court House Square	W. & E. Canal	
Hynds	Inds. & V. R. R	
Idaville	T. P. & W. R. R	
Indianapolis, city datum	City Engineer	
Do .....Belt R. R. Crossing	J. M. & I. R. R	
Do .....Signal Station	U. S. Signal Office	
Do .....Union Depot	C., C., C. & I. R. R	
Jamesboro	C., W. & M. R. R	
Jefferson	L. E. & W. R. R	
Do..Geodetic Station.	U. S. Lake Survey	
Do..Junction	J., M. & I. R. R	
Jeffersonville	O. & M. R. R	
Jonesboro	Pan Handle R. R	
Jonesville	J., M. & I. R. R	
Kankakee	P. R. & P. R. R	
Do...Bridge	B. P. & C. R. R	
Kempton	L. E. & W. R. R	
Kendallville	L.S.. M. S. R. R	
Kennard	I., B. & W. R. R	1,
Kent Station	T., P. & W. R. R	
Keystone	Ft. W., M. & C. R. R	
Kingsbury	Peninsula R. R	
King's Store	L. E. E. & S. W, R. R	
Koutts	Pan Handle R. R	
La Crosse	Pan Handle R. R	
La Fayette	T., W. & W. R. R	
La Grange	G. R. & Ind. R. R	
La Gro	T., W. & W. R. R	
Lake	M. C. R. R	
Lake Cicott	T. P. & W. R. R	
Lake Station	J. & N. Ind. R. R	
Laketon	Eel R. R. R	
Langdons	J., M. & I. R. R	
La Porte	L,. S. & M. S. R. R	
Lawrence	C., C., C. & I. R. R	
Lawrenceburgh	O. & M. R. R	
Do .....bench-mark on water table of the court-house front	U. S. C. & G. S	
Leatherwood	I., D. & S. R. R	
Lebanon	Inds. & La. F. R. R	
Leonard	I., B. & W. R. R	1,
Lewis Creek	J., M. & I. R. R	

Station.	Authority.	Elevation.
		Feet.
Lexington	O. & M. R. R	626
Liberty	C., H. & D. R. R	979
Do. Mills	Eel R. R. R	773
Ligonier	L. S. & M. S. R. R	886
Lima	G. R. & Ind. R. R	882
Lisbon	G. R. & Ind. R. R	1,022
Logansport	W., St. L. & P. R. R	606
London	C., I., St. L. & C. R. R	775
Loogootee	O. & M. R. R	532
Losantville	I., B. & W. R. R	1,140
Lowell	J., M. & I. R. R	636
Lowrys	L. E. & W. R. R	874
Lusburg	C. W. & M. R. R	880
Lyons	Inds. & V. R. R	509
Lynn, crossing G. R. & Ind. R. R	I., B. & W. R. R	1,174
McCord's	C., C., C. & I. R. R	854
McCoy's	C., I., St. L. & C. R. R	1,027
McMillan's	J., M. & I. R. R	1,010
Madison	J., M. & I. R. R	451
Do. foot of inclined plane	J., M. & I. R. R	472
Manchester Avenue	C., C., C. & I. R. R	721
Manilla	J., M. & I. R. R	896
Maplewood	I., D. & S. R. R	842
Marco	Inds. & V. R. R	482
Marion	Pan Handle R. R	811
Marshall	I., D. & S. R. R	700
Marshfield	T., W. & W. R. R	721
Do	J., M. & I. R. R	543
Martinsville	Inds. & V. R. R	598
Matthews	Inds. & V. R. R	691
Maxwells	I., B. & W. R. R	920
Maywood	Inds. & V. R. R	695
Memphis	J., M. & I. R. R	490
Messick	I., B. & W. R. R	1,090
Mexico	Eel R. R. R	700
Michigan City	M. C. R. R	603
Do...Lake	U. S. Lake Survey	582
Middle Fork	J., M. & I. R. R	813
Mier	Pan Handle R. R	816
Milan	O. & M. R. R	985
Milford	C., W. & M. R. R	850
Do. Junction	B., P. & C. R. R	841
Millers	L. S. & M. S. R. R	625
Do. Geodetic Station	U. S. Lake Survey	710
Millersburgh	L. S. & M. S. R. R	886
Mishawaka	L. S. & M. S. R. R	722
Mitchell	O. & M. R. R	676
Do..B. M. on window-sill W. corner of S. W face, M. N. Moore's store	U. S. C. & G. S	688
Mitchellville	I., D. & S. R. R	872
Mongo, Geodetic Station	U. S. Lake Survey	1,027
Montclair	I., D. & S. R. R	759
Montezuma	I., D. & S. R. R	494
Monticello	T., P. & W. R. R	672
Montmorency	L. E. & W. R. R	672
Montpelier	Ft. W., M. & C. R. R	867
Moonfield	I., D. & S. R. R	705
Moore's Hill	O. & M. R. R	916
Mooresville	Eel R. R. R	877
Do	Inds. & V. R. R	685
Morris	C., I., St. L. & C. R. R	982
Morristown	C., H. & D. R. R	842
Mount Comfort	I., B. & W. R. R	870
Mount Vernon	St. L. & S. E. R. R	407

Station.	Authority.	Elevation.
		Feet.
Mulberry	L. E. & W. R. R	754
Muncie	C., C., C. & I. R. R	948
Mundays	Inds. & V. R. R	569
New Albany	J. M. & I. R. R	438
Do.....low water Ohio River	L., N. A. & C. R. R	362
Newbys	L. E. & W. R. R	861
New Carlisle	L. S. & M. S. R. R	772
New Castle	I. B. & W. R. R	1,075
New Era	Ft. W., J. & S. R. R	859
New Haven	T. W. & W. R. R	753
New Judson	P. K. & P. R. R	681
New Lisbon	Ft. W., M. & C. R. R	1,098
New Paris	C. W. & M. R. R	828
New Point	C., I., St. L. & C. R. R	981
Newport	E., T. H. & C. R. R	494
New Providence	L., N. A. & C. R. R	551
Nixon	I. B. & W. R. R	1,015
North Grove	Pan-Handle R. R	817
North Judson	Pan-Handle R. R	702
North Madison	J., M. & I. R. R	878
Do.....top of inclined plane	J., M. & I. R. R	876
Do.....summit of line	J., M. & I. R. R	880
North Manchester	Eel R. R. R	775
North Salem	I., D. & S. R. R	888
North Vernon	J., M. & I. R. R	727
Do .....O. & M. R. R. crossing	J., M. & I. R. R	727
Numa	E., T. H. & C. R. R	522
Oakland	C., C., C. & I. R. R	846
Oakley	I., D. & S. R. R	898
Onward	Pan-Handle R. R	763
Opedu	E., T. H. & C. R. R	510
Orleans	L., N. A. & C. R. R	633
Osceola	L. S. & M. S. R. R	737
Osgood	O. & M. R. R	950
Ossian	Ft. W., M. & C. R. R	831
Otis	L. S. & M. S. R. R	765
Otterbien	L. E. & W. R. R	685
Oxford	L. E. & W. R. R	703
Palestine	C., H. & D. R. R	831
Paragon	Inds. & V. R. R	577
Parker	C., C., C. & I. R. R	1,023
Pendleton	C., C., C. & I. R. R	847
Penn, Geodetic Station	U. S. Lake Survey	891
Perryville	E., T. H. & C. R. R	582
Perrysville	C. & E. Ill. R. R	468
Peru	W., St. L. & P. R. R	655
Do.court-house square	W. & E. Canal	657
Pierceville	O. & M. R. R	1,010
Pine	L. S. & M. S. R. R	699
Plainville	T. H. & Inds. R. R	742
Pleasant Lake	Ft. W., J. & S. R. R	975
Plymouth	P., K. & P. R. R	769
Plymouth	P., Ft. W. & C. R. R	781
Do...surface of Yellow River	P., Ft. W. & C. R. R	760
Poplar Grove	C., I., St. L. & C. R. R	849
Porter	M. C. R. R	647
Portland, low water Salamonie R	C., R. & Ft. W. R. R	904
Potters	Eel R. R. R	881
Prescott	C., I., St. L. & C. R. R	792
Princeton	E. & T. H. R. R	483
Prison Station	J., M. & I. R. R	462
Putnamville	L., N. A. & C. R. R	687
Quincy	L., N. A. & C. R. R	749
Raccoon	I., D. & S. R. R	745

Station.	Authority.	Elevation.
		Feet.
Red Cut	L., N. A. & C. R. R	832
Reeds	L. E. & W. R. R	936
Reelsville	T. H. & Inds. R. R	638
Remington	T., P. & W. R. R	732
Retreat	J., M. & I. R. R	540
Reynolds	T., P. & W. R. R	692
Richmond	C., R. & Ft. W. R. R	969
Richmond, low water of White River	C., R. & Ft. W. R. R	885
Ridgeville	Pan-Handle R. R	994
Do....railroad crossing	C., R. & Ft. W. R R	993
Do....low water Mississinewa River		964
Riley	T. H. & S. E. R. R	569
Roachdale	I., D. & S. R. R	839
Roann	Eel R. R. R	750
Rock Creek	J., M. & I. R. R	665
Rockford	J., M. & I. R. R	585
Do..bridge over White River	J., M. & I. R. R	585
Rolling Prairie	L. S. & M. S. R. R	821
Rome City	G. R. & Ind. R. R	920
Rosedale	Pan-Handle R. R	722
Ross	J. & N. Ind. R. R	636
Royal Centre	Pan-Handle R. R	735
Rushville	J., M. & I. R. R	964
Do ..C., H. & I. R. R	J., M. & I. R. R	972
Russellville	I., D. & S. R. R	828
Saint Johns	J., M. & I. R. R	763
Saint Louis	J., M. & I. R. R	683
Saint Paul	C., I., St. L. & C. R. R	852
Salamonie, low water of Wabash River	W. & E. Canal	667
Salem	L., N. A. & C. R. R	714
Saline City	T. H. & S. E. R. R	555
Sanborn	Ind. & V. R. R	472
San Pierre	P., K. & P. R. R	689
Scipio	J., M. & I. R. R	680
Scottsburgh	J., M. & I. R. R	570
Sedan	L. S. & M. S. R. R	923
Seeleyville	T. H. & Inds. R. R	585
Sellersburgh	J., M. & I. R. R	478
Selma	C., C., C. & I. R. R	1,005
Seymore	J., M. & I. R. R	605
Do.Ind., O. & M. R. R. crossing	J., M. & I. R. R	608
Shelbyville	J., M. & I. R. R	769
Do....C. & I., St. L. & C. R. R. crossing	J., M. & I. R. R	768
Shoals, east front Wabash River	O. & M. R. R	480
Silver Lake	C., W. & M. R. R	927
Smedley	L., N. A. & C. R. R	875
Smith's Crossing	C., I., St. L. & C. R. R	1,003
Smithville	L., N. A. & C. R. R	717
Smyth	L., E. E. & S. W. R. R	379
South Bend	L. S. & M. S. R. R	725
Do	Mich. A. L. R. R	679
Do ....L. S. & M. S. R. R. crossing	Peninsula R. R	733
Do ....Saint Joseph's River	Peninsula R. R	699
Southport	J., M. & I. R. R	761
South Waveland	I., D. & S. R. R	789
South Whitley	Eel R. R. R	808
Spades	C., I., St. L. & C. R. R	1,013
Sparta Lake	B., P. & C. R. R	938
Speeds	J., M. & I. R. R	465
Spencer	Inds. & V. R. R	557
Spring Hill	T. H. & S. E. R. R	508
Springport	Ft. W., M. & C. R. R	1,018
Star City	Pan-Handle R. R	706
Staunton	T. H. & Inds. R. R	643

Station.	Authority.	Elevation.
		Feet.
Stevens	L., E., E. & S. W. R. R.	379
Stockford	St. L. & S. E. R. R	380
Sugar Creek	I., B. & W. R. R	855
Sullivan	E. & T. H. R. R	538
Summit	J., M. & I. R. R	618
Summit Grove	E., T. H. & C. R. R	620
Summit Station	P., Ft. W. & C. R. R	851
Do	Ft. W., J. & S. R. R	1,001
Summitville	C., W. & M. R. R	896
Sunman	C., I., St. L. & C. R. R	1,015
Switz City	Inds. & V. R. R	526
Switzer	Pan-Handle R. R	836
Syracuse	B., P. & C. R. R	870
Talbot	L., E. & W. R. R	710
Taylors	Eel R. R. R	864
Taylorsville	J., M. & I. R. R	656
Teegardin	B., P. & C. R. R	794
Templeton	L., E. & W. R. R	675
Terra Coupee	L. S. & M. S. R. R	760
Terre Haute	E., T. H. & C. R. R	492
Do.....Chestnut street	C. & E. Ill. R. R	492
Do.....low water in Wabash River	C. & E. Ill. R R	445
Do.....public square		498
Do.....Rockville R. R. crossing	T. H. & Inds. R. R	492
Do.....Alton R. R. crossing	T. H. & Inds. R. R	492
Do.....7th street R. R. crossing	T. H. & Inds. R. R	496
Do.....3d street R. R. crossing	T. H. & Inds. R. R	494
Thorntown	Ind. & La F. R. R	813
Tippecanoe Crossing	Pan-Handle R. R	671
Tipton	L., E. & W. R. R	868
Tolleston	M. C. R. R	607
Turkey Lake, high water	B., P. & C. R. R	868
Tyrone	I., D. & S. R. R	872
Union	C., C., C. & I. R. R	1,108
Upton, R. R. transfer	St. L. & S. E. R. R	369
Urbana	C., W. & M. R. R	815
Valentine	G. R. & Ind. R. R	952
Valley Mills	Inds. & V. R. R	759
Valparaiso	P., Ft. W. & C. R. R	738
Do	Peninsula R. R	801
Van Buren, Geodetic Station	U. S. Lake Survey	950
Vernon	J., M. & I. R. R	686
Do. Muscatatack Bridge	J., M. & I. R. R	669
Vienna	J., M. & I. R. R	566
Vincennes	E. & T. H. R. R	463
Vincennes	C. & V. R. R	417
Do....bench-mark on stone ledge northwest front court-house.	U. S. C. & G. S	435
Vincennes, bench-mark on center of top of easternmost stone pier of United States Coast and Geodetic Survey astronomical observatory, court-house grounds.	U. S. C. & G. S	431
Vistula	L. S. & M. S. R. R	809
Wabash	W., St. L. & P. R. R	735
Wabash	T. W. & W. R. R	740
Do. Court House Square	W. & E. Canal	730
Do. W., St. L. & P., over crossing	C. W. & M. R. R	742
Walcott	T. P. & W. R. R	715
Walcottsville	G. R. & Ind. R. R	938
Waldron	C. I., St. L. & C. R. R	819
Walesboro	J., M. & I. R. R	613
Wallen	G. R. & Ind. R. R	839
Walnut Grove	E., T. H. & C. R. R	528
Wanatah	P., Ft. W. & C. R. R	731

Station.	Authority.	Elevation.
		Feet.
Warren	L. S. & M. S. R. R	731
Warrington	I., B. & W. R. R	1,020
Warsaw	P., Ft. W. & C. R. R	824
Do. P., Ft. W. & C. crossing	C. W. & M. R. R	839
Washington, B. M. on sill of basement window S. E. corner of court-house	U. S. C. & G. S	510
Washington	O. & M. R. R	484
Waterloo	L. S. & M. S. R. R	897
Do	Inds. & V. R. R	723
Do. . crossing L. S. & M. S. R. R	Ft. W., J. & S. R. R	914
Watsons	Ind. & V. R. R	521
Wawaka	L. S. & M. S. R. R	896
Waynesville	J., M. & I. R. R	607
Weisburgh	C., I., St. L. & C. R. R	929
West Lebanon	T. W. & W. R. R	720
West Newton	Inds. & V. R. R	779
Westphalia	Inds. & V. R. R	456
West River	I., B. & W. R. R	1,110
West Shoals, B. M. on center of cross on face of stone cap of basement window on W. side of C. H	U. S. C. & G. S	523
Westville	L., N. A. & C. R. R	786
Wheeler	P., Ft. W. & C. R. R	666
Whiteland	J., M. & I. R. R	805
Whitesville	L., N. A. & C. R. R	874
Whiting	L. S. & M. S. R. R	606
Wigs	J., M. & S. R. R	635
Williams	T. H. & Inds. R. R	666
Williamsport	T., W. & W. R. R	619
Willow Branch	I., B. & W. R. R	950
Winamac	Pan-Handle R. R	713
Winchester	C., C., C. & S. R. R	1,089
Do. . . . at crossing of Bellefontaine R. R.	C. R. & Ft. W. R. R	1,088
Wirts	J., M. & I. R. R	842
Woodburn	T., W. & W. R. R	750
Worthington	Ind. & V. R. R	522
Do . . . . . crossing	Ft. W., M. & C. R. R	866
Wrays	J., M. & I. R. R	866
Yorktown	C., C., C. & I. R. R	924
Zionsville	Inds. & La. F. R. R	

INDIAN TERRITORY.

Station.	Authority.	Elevation.
		Feet.
Adair	Mo., Kans. & Tex. R. R.	684
Arbuckle, Fort	Med. Dept., U. S. A.	1,000
Atoka	Mo., Kans. & Tex. R. R.	556
Beaversville	Pacific R. R. Reports	1,083
Blue Jacket	Mo., Kans. & Tex. R. R.	779
Bushy Head	A. & P. R. R.	773
Caddo	Mo., Kans. & Tex. R. R.	705
Caney	Mo., Kans. & Tex. R. R.	530
Catall	A. & P. R. R	792
Catoosa	A. & P. R. R	623
Checota	Mo., Kans. & Tex. R. R.	587
Chelsea	A. & P. R. R	718
Choteau	Mo., Kans. & Tex. R. R.	624
Claremore	A. & P. R. R	604
Colbert	Mo., Kans. & Tex. R. R.	658
Durant	Mo., Kans. & Tex. R. R.	639
Eufala	Mo., Kans. & Tex. R. R.	617
Fulsa	A. & P. R. R	701
Gibson	Mo., Kans. & Tex. R. R.	533
Gibson, Fort, Signal Station	U. S. Signal-Office	510
Honey Springs	Toner	568
Kingfisher		950
Lilietta	Mo., Kans. & Tex. R. R.	592
Limestone Gap	Mo., Kans. & Tex. R. R.	645
McAlister	Mo., Kans. & Tex. R. R.	684
Mingo	A. & P. R. R	608
Muscogee	Mo., Kans. & Tex. R. R.	599
Oaktata	Mo., Kans. & Tex. R. R.	590
Perryville	Mo., Kans. & Tex. R. R.	708
Reams	Mo., Kans. & Tex. R. R.	609
Sequoyah	A. P. R. R.	698
Shawnee Village	Pacific R. R. Reports	812
Sill, Fort, Signal Station	U. S. Signal-Office	1,190
South Canadian	Mo., Kans. & Tex. R. R.	657
Stringtown	Mo., Kans. & Tex. R. R.	625
Towson, Fort	Med. Dept., U. S. A.	300
Vinita, Junction with St. L. & S. F. R. R.	Mo., Kans. & Tex. R. R.	698
Virdigris	A. & P. R. R	613
White Oak	A. & P. R. R	772

IOWA.

Station.	Authority.	Elevation.
		Feet.
Abbott	Cent. Iowa R. R.	1,176
Ackley	Cent. Iowa R. R.	1,177
Adams	B., C. R. & N. R. R	608
Adel	D., M. & N. W. R. R	901
Agency	B. & M. R. R. R.	801
Albia	B. & M. R. R. R.	945
Albion	Cent. Iowa R. R.	968
Alden	Toner	1,165
Algona	Smithsonian Inst	1,500
Alta	Ill. Cent. R. R.	1,519
Ames	C. & N. W. R. R	936
Arcadia	C. & N. W. R. R	1,439
Ashawa	D. M. & Ft. D. R. R.	905
Atkinson, Fort	Med. Dept., U. S. A	700
Atlee	Ft. M. & N. W. R. R	827
Barnes City	B., C. R. & N. R. R	900
Barnum	Toner	1,173
Bartlett	K. C., St. J. & C. B. R. R	949
Batavia	B. & M. R. R. R	640
Bayfield	B., C. R. & N. R. R	674
Beasons	C., R. I. & P. R. R	1,256
Beaver	C. & N. W. R. R	1,041
Belknap (summit)	W., St. L. & P. R. R	857
Belleplaine	C. & N. W. R. R.	840
Beloit	S. C. & D. R. R	1,257
Benbow	Ft. M. & N. W. R. R	813
Benson's Grove	M. & St. L. R. R	1,216
Bertram	C. & N. W. R. R.	733
Big Creek	Toner	590
Blairsburgh	Ill. Cent. R. R.	1,237
Blairstown	C. & N. W. R. R	855
Blencoe	S. C. & P. R. R.	1,056
Bloomfield	W., St. L. & P. R. R.	855
Do..junction with W., St. L. and P. R. R	B. & S. R. R	884
Boone	C. & N. W. R. R	1,155
Boonesborough	Toner	1,160
Bowen's Prairie	Toner	800
Brainard	B., C. R. & N. R. R.	909
Britt	M. & St. L. R. R	1,230
Brooklyn	C., R. I. & P. R. R	836
Burlington, H. W. Miss. River, 1851	B. & M. R. R. R	523
Do ..H. W. Miss. River, 1870	B. & M. R. R. R	518
Do ..L. W. Miss. River, 1870	B. & M. R. R. R	505
Do crossing Main street	C., B. & Q. R. R.	526
Do...bridge	C., B. & Q. R. R.	537
Calamus	C. & N. W. R. R.	721
Caldwell	B. & S. R. R	887
California Junction	S. C. & P. R. R	1,024
Callender	D. M. & Ft. D. R. R.	1,167
Calliope	S., C. & D. R. R	1,200
Calmar	C., M. & St. P. R. R	1,269
Cantril	B. & S. R. R.	776
Carroll	C. & N. W. R. R	1,240
Cascade	D. & St. P. R. R.	770
Casey	C., R. I. & P. R. R	1,226
Castalia	C., M. & St. P. R. R.	1,257
Cedar Creek	Toner	616

Station.	Authority.	Elevation.
		Feet.
Cedar Falls	B., C. R. & N. R. R	844
Do.....water in Cedar River	C., F. & M. R. R	859
Cedar Rapids	C. & N. W. R. R	744
Do .....City datum	City engineer	719
Central City	Toner	986
Centredale	B., C. R. & N. R. R	715
Centre Point	B., C. R. & N. R. R	809
Centreville, crossing C. R. I. & P. at grade	Mo., Iowa & Neb. R. R	1,013
Ceres	Toner	825
Chapin	Cent. Iowa R. R	1,246
Chariton	B. & M. R. R	1,030
Charles City	C. M. & St. P. R. R	1,012
Charleston	K. & N. W. R. R	676
Chequaque	B. & M. R. R. R	605
Cherokee	Ill. Cent. R. R	1,211
Chester	C., M. & St. P. R. R	1,244
Chickasaw	C., M. & St. P. R. R	1,148
Chillicothe	B. & M. R. R. R	645
Cincinnati	B. & S. R. R	1,037
Clarence	C. & N. W. R. R	841
Clarenda	B. & M. R. R. R	1,069
Clarenda Junction	B. & M. R. R	1,097
Clarksville	B., C. R. & N. R. R	914
Clear Lake		984
Do....depot	C., M. & St. P. R. R	1,237
Clermont	B., C. R. & N. R. R	856
Clinton (station grounds)	C. & N. W. R. R	609
Do .H. W. Miss. River	C. & N. W. R. R	587
Clorinda	Mo., Iowa & Neb. R. R	1,032
Coalfield	Cent. Iowa R. R	725
Colburg	B. & M. R. R. R	1,008
Colfax	Toner	753
Colo	C. & N. W. R. R	1,059
Columbus Junction	B., C. R. & N. R. R	585
Cone	B., C. R. & N. R. R	608
Conover	C. M. & St. P. R. R	1,247
Coon River		1,017
Corinth	M. & St. L. R. R	1,180
Corning	B. & M. R. R	1,127
Corydon	Mo., Iowa & Neb. R. R.	1,092
Council Bluffs U. P. transfer depot	K. C. St. J. & C. B. R. R	989
Do..... U. P. bridge, abutments	K. C. St. J. & C. B. R. R	1,038
Do..... Bed Mo. R	K. C. St. J. & C. B. R. R	953
Do..... H. W. Mo. R	K. C. St. J. & C. B. R. R	986
Do..... L. W. Mo. R	K. C. St. J. & C. B R. R.	967
Crawfordsville	B. & M. R. R. R	692
Crescent		1,209
Cresco	C., M. & St. P. R. R	1,312
Cromwell	B. & M. R. R. R	1,220
Dallas Centre	D., M. & Ft. D. R. R	1,085
Danville	B. & M. R. R. R	715
Davenport	C., R. I. & P. R. R	578
Do....Signal Station	U. S. Signal Office	615
Do....City datum	City engineer	534
Do....H. W. Miss. R	City engineer	556
Do....L. W. Miss. R	City engineer	539
Davis Creek	Toner	649
Deam	Mo., Iowa & Neb. R. R	825
Decorah	C., M. & St. P. R. R	900
Delassus	Toner	1,068
Delavan	Toner	636
Delaware	Ill. Cent. R. R	1,084
Do.. crossing D. & I. R. R	D. & St. P. R. R	938

Station.	Authority.	Elevation.
		Feet.
Delaware, crossing D. & S. C. R. R	D. & St. P. R. R	1,083
Do..Centre		1,106
Denison	C. & N. W. R. R	1,192
Des Moines, station C., R. I. & P. R. R	City engineer	800
Do..... station C., & N. W. R. R	City engineer	798
Do..... station D., M. & N. W. R. R	City engineer	807
Do..... station K. & D. M. R. R	City engineer	799
Do..... L. W. in Des Moines R	City engineer	776
Des Moines, Signal Station	U. S. Signal Office	849
De Soto	C., R. I. & P. R. R	886
Dewey	Ft. M. & N. W. R. R	813
Dewitt, crossing D. & St. P. R. R	C. & N. W. R. R	699
Dexter	C., R. I. & P. R. R	1,146
Dillon	Cent. Iowa R. R	985
Donaldson	B. & S. R. R	707
Donnellson	K. & N. W. R. R	681
Doon	St. P. & S. C. R. R	1,282
Downey	C., R. I. & P. R. R	683
Dry Creek	Toner	1,003
Dubuque	Ill. Cent. R. R	614
Do. City datum	Ill. Cent. R. R	595
Do. Signal Station	U. S. Signal Office	655
Duncombe	Ill. Cent. R. R	1,118
Durant	C., R. I. & P. R. R	712
Dye	Ft. M. & N. W. R. R	814
Dyersville	Ill. Cent. R. R	940
Dysart	B., C. R. & N. R. R	958
Earlham	C., R. I. & P. R. R	1,106
East Nebraska City, Junction	K. C., St. J. & C. B. R. R	926
Do..... Depot	K. C., St. J. & C. B. R. R	928
East Orange	St. P. & S. C. R. R	1,302
East Plattsmouth	Toner	924
Eastport	Mo., Iowa & Neb. R. R	926
Do..rail K. C., St. J. & C., B. R. R	Mo., Iowa & Neb. R. R	929
Do..water in Mo. River March 12, 1871	Mo., Iowa & Neb. R. R	912
Eddyville	Cent. Iowa R. R	672
Do...Des Moines River "surface"	Cent. Iowa R. R	698
Eldora	Cent. Iowa R. R	1,153
Elgin	B., C. R. & N. R. R	833
Elm Creek	Toner	1,094
Elmira	B., C. R. & N. R. R	741
Ely	B., C. R. & N. R. R	731
Essex	B. & M. R. R. R	996
Exline	B. & S. R. R	1,016
Fairbanks	Toner	1,083
Fairfax	C. & N. W. R. R	784
Fairfield	B. & M. R. R. R	767
Farley	Ill. Cent. R. R	1,111
Farmington, crossing K. & D. M. R. R	B. & S. R. R	571
Farragut	B. & M. R. R. R	963
Fayette Village	Smithsonian Inst	1,000
Floyd	I. C., C., F. & M. R. R	1,107
Forest City	M. & St. L. R. R	1,220
Fort Atkinson	C., M. & St. P. R. R	1,023
Fort Dodge	D. M. & Ft. D. R. R	1,015
Do	Ill. Cent. R. R	1,032
Do	M. & St. L. R. R	1,120
Fort Madison	C. B. & Q. R. R	516
Do	Ft. M. & N. W. R. R	632
Do..... 14th st	Ft. M. & N. W. R. R	644
Franklin	B. & S. R. R	702
Do	Cent. Iowa R. R	1,193
Frederic	B. & M. R. R. R	735
Fredericksburgh	Toner	765

Station.	Authority.	Elevation.
		Feet.
Fulton	C., R. I. & P. R. R	758
Garner	C., M. & St. P. R. R	1,227
Garrison	B., C. R. & N. R. R	849
Geneva	Cent. Iowa R. R	1,181
Gifford	Cent. Iowa R. R	1,030
Gilman	Cent. Iowa R. R	1,035
Given	Cent. Iowa R. R	703
Glendale	B. & M. R. R. R	745
Glenwood	B. & M. R. R. R	979
Gowrie	D. M. & Ft. D. R. R	1,154
Graham	B., C. R. & N. R. R	816
Grand Junction	C. & N. W. R. R	1,055
Grand Mound	C. & N. W. R. R	736
Greene	B., C. R. & N. R. R	943
Grinnell	C., R. I. & P. R. R	1,011
Grove City	C., R. I. & P. R. R	1,271
Grundy Center	B., C. R. & N. R. R	966
Guthrie	C., R. I. & P. R. R	1,269
Guttenberg	Toner	690
Hamburg	K. C., St. J. & C. B. R. R	912
Do...Semaphore, B. & M. Junction	K. C., St. J. & C. B. R. R	902
Hampton	Cent. Iowa R. R	1,240
Hardin's Creek	Toner	1,026
Harmony	B., & M. R. R. R	1,040
Harris Grove	Smithsonian Inst	900
Haynes, side track	K. C., St. J. & C. B. R. R	955
Hazard	Toner	1,405
Hazelton	B., C. R. & N. R. R	988
Hepburn	B., & M. R. R. R	1,078
Hesper	Smithsonian Inst	720
Hickory Grove	Cent. Iowa R. R	810
Holland	B., C. R. & N. R. R	985
Homestead	C., R. I. & P. R. R	866
Hosper	St. P. & S. C. R. R	1,338
Humboldt	Ft. D. & Ft. R. R. R	1,082
Do	M. & S. N. L. R. R	1,089
Independence	Ill. Cent. R. R	921
Do	B., C. R. & N. R. R	1,111
Iowa City	B., C. R. & N. R. R	644
Do	C., R. I. & P. R. R	671
Iowa Junction	B., C. R. & N. R. R	618
Jamesville	C. F. & M. R. R	892
Jesup	Ill. Cent. R. R	990
Julien	Toner	845
Kalona	B., C. R. & N. R. R	651
Kellogg	C., R. I. & P. R. R	839
Kennedy	D. M. &. N. W. R. R	968
Kensett	Cent. Iowa R. R	1,306
Keokuk, Water Street depot	C. B. & Q. R. R	501
Do..city datum	City Engineer	480
Do..track on bridge	City Engineer	508
Do..Signal Station	U. S. Signal Office	618
Keswick	B., C. R. & N. R. R	862
Kinross	B., C. R. & N. R. R	757
Kossuth	B., C. R. & N. R. R	769
Lacey	Cent. Iowa R. R	850
Lake Mills	M. & St. L. R. R	1,264
La Porte	B., C. R. & N. R. R	802
Le Grande	C. & N. W. R. R	953
Le Mars	St. P. & S. C. R. R	1,221
Do. Floyd River	St. P. & S. C. R. R	1,197
Leon, cross branch, B. & M. R. R. R	Mo., Iowa & Neb. R. R	1,025
Le Roy	C. M. & St. P. R. R	1,298

Station.	Authority.	Elevation.
		Feet.
Springs	C. M. &. St. P. R. R	1,258
n	D. M. & N. W. R. R	1,139
ı	B., C. R. & N. R. R	761
ı	C. & N. W. R. R	888
ıb	Cent. Iowa R. R	1,078
nore	M. & St. L. R. R	1,135
ɔ	Ft. D. & Ft. R. R. R	1,128
ı	Toner	928
n	C. & N. W. R. R	733
Tree	B., C. R. & N. R. R	718
ınd, B. & M. R. R. R. station	Mo., Iowa & Neb. R. R	962
ɜn	B., & M. R. R. R	1,205
floor	C. & N. W. R. R	657
ı	C., M. & St. P. R. R	1,132
	Toner	857
City	Smithsonian Inst	630
ɜgor, L. W. Miss. R	C., M. & St. P. R. R	616
o....H. W. Miss. R	C., M. & St. P. R. R	634
ıl	K. C., St. J. & C. B. R. R	940
on		600
ıester	Ill. Cent. R. R	950
Junction	B., C. R. & N. R. R	1,189
o	Cent. Iowa R. R	1,291
ɔn	Ill. Cent. R. R	1,245
erock	B., C. R. & N. R. R	992
ıs	Ill. Cent. R. R	1,469
ıalltown, crossing Iowa Central R. R.	C. & N. W. R. R	898
s Ford	Toner	1,148
ı City	C., M. & St. P. R. R	1,130
ard	B., C. R. & N. R. R	1,096
ınicsville	C. & N. W. R. R	912
ɜpolis	B. & N. R. R	756
se	B. & M. R. R. R	853
en	Ill. Cent. R. R	1,412
etown	B. & M. R. R. R	725
ı	B. & S. R. R	806
ırn	D. M. & Ft. D. R. R	1,062
ıri Valley, junction with S. C. & P.		
t	C. & N. W. R. R	1,022
ell	C. F. & M. R. R	1,202
ellville	C., R. I. & P. R. R	966
le	S. C. & P. R. R	1,029
ɜona, bridge over Des Moines River	C. & N. W. R. R	907
o....L. W. Des Moines River	C. & N. W. R. R	870
	Ill. Cent. R. R	1,203
amin	S. C, & P. R. R	1,038
na	C., M. & St. P. R. R	1,221
ɜzuma	B., C. R. & N. R. R	948
cello (near)	Smithsonian Inst	800
ɔur	C. & N. W. R. R	868
ng Sun	B., C. R. & N. R. R	835
son	B., C. R. & N. R. R	937
ı	B., C. R. & N. R. R	753
ɔw	C., R. I. & P. R. R	652
ɜon	W., St. L. & P. R. R	994
ɔ..junction with W., St. L. & P. R. R.	B. & S. R. R	994
t Auburn	B., C. R. & N. R. R	853
t Ayr	Mo., Iowa & Neb. R. R	1,236
t Pleasant	B. & M. R. R. R	725
t Sterling	B. & S. R. R	649
t Union	B. & N. R. R	712
t Vernon	C. & N. W. R. R	858
ay	Toner	1,183

Station.	Authority.	Elevati
		F
Muscatine	B., C. R. & N. R. R	
Nashua	C., F. & M. R. R	
Nevada	C. & N. W. R. R	1,
New Boston	K. & N. W. R. R	
Newburgh	Cent. Iowa R. R	1,
New Hampton	C., M. & St. P. R. R	1,
New Jefferson	C. & N. W. R. R	1,
New Sharon	Cent. Iowa R. R	
Newton	C., R. I. & P. R. R	
Nichols	B., C. R. & N. R. R	
Nishnabotany	Toner	1,
Nodaway	B. & M. R. R. R	1,
Nora Junction	B., C. R. & N. R. R	1,
Norman	M. & St. L. R. R	1,
North McGregor	C., M. & St. P. R. R	
North Union	Toner	1,
Northwood	B. C., R. & N. R. R	1,
Norway	C. & N. W. R. R	
Oakland	B. & M. R. R. R	1,
Oasis	B., C. R. & N. R. R	
Oelwein	B., C. R. & N. R. R	1,
Ogden	C. & N. W. R. R	1,
Onana City	S. C. & P. R. R	1,
Ortonville	D. M. & N. W. R. R	1,
Osage	I. C., C. F. & M. R. R	1,
Osceola	B. & M. R. R. R	1,
Oskaloosa	Cent. Iowa R. R	
Ossian	C., M. & St. P. R. R	1,
Ottumwa	B. & M. R. R. R	
Oxford	C., R. I. & P. R. R	
Pacific Junction, C. B. &. Q. R. crossing	K. C., St. J. & C. B. R. R	
Do depot	K. C., St. J. & C. B. R. R	
Palo	B., C. R. & N. R. R	
Panora	D. M. & N. W. R. R	1,
Parkersburgh	Toner	
Paton	D. M. & Ft. D. R. R	1,
Peosta	Ill. Cent. R. R	
Percival	K. C., St. J. & C. B. R. R	
Perry	D. M. & Ft. D. R. R	
Pitman	Ft. M. & N. W. R. R	
Plainfield	C. F. & M. R. R	
Pleasant Plain	Smithsonian Inst	
Plymouth Junction	B., C. R. & N. R. R	1,
Pomeroy	Toner	1,
Portlandville	S. C. & D. R. R	1,
Postville	C. M. & St. P. R. R	1,
Poulteney	Toner	
Prairie Creek	Toner	
Pulaski	B. & S. R. R	
Quarry	C. & N. W. R. R	
Quasqueton	Smithsonian Inst	
Randalia	B., C. R. & N. R. R	1,
Redfield	D. M. & N. W. R. R	
Red Oak	B. & M. R. R	1,
Reinbeck	B., C. R. & N. R. R	
Remsen	Toner	1,
Rippey	D. M. & Ft. D. R. R	1,
Riverside	B., C. R. & N. R. R	
River Sioux	S. C. & P. R. R	1,
Riverton	B. & M. R. R. R	
Rock Falls	B., C. R. & N. R. R	1,
Rockford	B., C. R. & N. R. R	1,
Rock Rapids	St. P. & S. C. R. R	1,
Rockwell	Cent. Iowa R. R	1,

Station.	Authority.	Elevation.
		Feet.
Rolfe	Smithsonian Inst	1,000
Roscoe	B. & N. R. R	755
Rossville	Smithsonian Inst	1,400
Rowley	B., C. R. & N. R. R	980
Russell	B. & M. R. R	1,017
Sac City	Toner	900
St. Ansgar	C. F. & M. R. R	1,179
St. Gilman	St. P. & S. C. R. R	1,442
St. Mary's	Smithsonian Inst	1,200
Salem	Toner	694
Salix	S. C. & P. R. R	1,097
Salt Creek	Toner	792
Sand Springs, crossing D. and I. R. R	D. & St. P. R. R	938
Sargeants	S. C. & P. R. R	1,008
Searsboro	Cent. Iowa R. R	810
Sedan, crossing B. and S. W., at grade	Mo., Iowa & Neb. R. R	827
Seney	St. P. & S. C. R. R	1,221
Sheffield	Cent. Iowa R. R	1,163
Sheldon	St. P. & S. C. R. R	1,406
Shell Rock	B., C. R. & N. R. R	911
Shellsburgh	B., C. R. & N. R. R	764
Shenandoah	B. & M. R. R. R	979
Sibley	St. P. & S. C. R. R	1,509
Sioux City	St. P. & C. R. R	1,122
Sioux Valley	S. C. & D. R. R	1,185
Sloan	S. C. & P. R. R	1,089
Solon	B., C. R. & N. R. R	784
South English	B., C. R & N. R. R	830
Sperry	B., C. R. & N. R. R	747
Spring Valley	D. & St. P. R. R	1,236
Squaw Fork	Toner	915
Stanton	Toner	1,004
Stanwood	C. & N. W. R. R	863
State Center	C. & N. W. R. R	1,086
Steamboat Rock	Cent. Iowa R. R	1,061
Strawberry Point	D. & St. P. R. R	1,218
Summit Station	C., F. & M. R. R	1,084
Summitville	K. & N. W. R. R	666
Tama	C. & N. W. R. R	832
Tara	D., M. & Ft. D. R. R	1,159
Thayer	Toner	1,002
Thornburgh	B., C. R. & N. R. R	868
Toddville	B., C. R. & N. R. R	770
Trader's Point	K. C., St. J. & C. B. R. R	974
Traer	B., C. R. & N. R. R	906
Tyrone	B. & M. R. R. R	819
Union	Cent. Iowa R. R	1,013
Vallisca	B. & M. R. R. R	1,058
Vawter's Grove	Smithsonian Inst	1,500
Victor	C. R., I. & P. R. R	806
Victoria	Toner	788
Viele	B. & S. R. R	543
Vinton	B., C. R. & N. R. R	800
Do	Smithsonian Inst	607
Walcott	C., R. I. & P. R. R	733
Walker	B., C. R. & N. R R	880
Walnut	B. & M. R. R. R	1,040
Wapello	B., C. R. & N. R. R	578
Warren	B. & S. R. R	709
Washburn	B., C. R. & N. R. R	817
Washington	B. & N. R, R	738
Waterloo	Ill. Cent. R. R	862
Waubeck	Toner	988
Waukee	D., M. & Ft. D. R. R	1,049

Station.	Authority.	Elevation.
		Feet.
Waverly	I., C., C., F. & M. R. R	942
Webster	Ill. Cent. R. R.	1,054
Wellman	B., C., R. & N. R. R.	688
Wesley	C., M. & St. P. R. R.	1,254
West Branch	B. C. R. & N. R. R.	708
Westfield	S. C. & D. R. R.	1,148
West Grove	W., St. L. & P. R. R.	946
West Liberty	C., R. I. & P. R. R	666
West Nishnabotany	Toner	939
West Point	Ft. M. & N. W. R. R	866
West Union	B., C. R. & N. R. R	1,105
What Cheer	B., C. R. & N. R. R	741
Wheatland	C. & N. W. R. R	695
Whitfield	B. & M. R. R	677
Whiting	S. C. & P. R. R	1,074
Willets	B. & S. R. R.	604
Wilton	C. R. I. & P. R. R	672
Winfield	B. & N. R. R.	690
Winslow	B., C. R. & N. R. R	874
Winthrop	Ill. Cent. R. R.	1,053
Yarmouth	B. & N. R. R.	696

KANSAS.

Station.	Authority.	Elevation.
		Feet.
Abilene	K. P. R. R	1,155
Alden	A., T. & S. F. R. R	1,675
Alma	A., T. & S. F. R. R	1,051
Alum Creek	K. P. R. R	1,568
Americus	M., K. & T. R. R	1,158
Ames	Toner	790
Aubrey	A., T. & S. F. R. R	3,121
Arcadia	Ft. S., S. E. & M. R. R	813
Arcola	K. P. R. R	1,423
Argentine	A., T. & S. F. R. R	748
Arkansas City	A., T. & S. F. R. R	1,064
Amstrong	K. P. R. R	755
Assaria	S. & S. W. R. R	1,284
Atchison	A., T. & S. F. R. R	973
Do...high water 1881	A., T. & S. F. R. R	787
Do...Nebraska Junction	St. J. & D. C. R. R	1,109
Atchison Fort	Med. Dept., U. S. A	2,330
Augusta	A., T. & S. F. R. R	1,212
Avon	Smithsonian Inst	775
Axtell	St. J. & D. C. R. R	1,363
Baldwin	K. C., L. & S. R. R	1,046
Barclay	A., T. & S. F. R. R	1,169
Barnard	K. C., Ft. S. & G. R. R	795
Barns	U. P. R. R	1,356
Barrett's	U. P. R. R	1,142
Barton	A., T. & S. F. R. R	1,448
Bavaria	K. P. R. R	1,271
Baxter	K. C., Ft. S. & G. R. R	831
Beattie	St. J. & D. C. R. R	1,294
Belfast	A., T. & S. F. R. R	2,669
Bellefonte	A., T. & S. F. R. R	2,345
Belleplaine	A., T. & S. F. R. R	1,209
Belleville	St. J. & D. C. R. R	1,536
Beloit	Soloman R. R	1,383
Belton	A., T. & S. F. R. R	1,098
Belvoir	L. & S. W. R. R	871
Belvue	K. P. R. R	965
Bennington	Soloman R. R	1,226
Beulah	K. C., Ft. S. & G. R. R	977
Big John	M., K. & T. R. R	1,218
Big Stranger	K. P. R. R	834
Bismarck	A., T. & S. F. R. R	1,185
Bismarck Grove	K. P. R. R	819
Black Wolf	K. P. R. R	1,565
Blue Rapids	U. P. R. R	1,198
Boling	A., T. & S. F. R. R	908
Bouita	K. C., Ft. S. & G. R. R	1,101
Boyles	K. C. R. R	1,165
Brenner	A. & N. R. R	977
Brittsville	Soloman R. R	1,336
Brookville	K. P. R. R	1,348
Buck Creek	K. P. R. R	846
Buffalo Park	K. P. R. R	2,755
Bunker Hill	K. P. R. R	1,864
Burden	S. K. & W. R. R	1,380
Burlingame	A. T. & S. F. R. R	1,043
Burlington	M., K. & T. R. R	1,037
Burns	A., T. & S. F. R. R	1,488

Station.	Authority.	Elevation.
		Feet.
Caldwell	A., T. & S. F. R. R	1,102
Cambridge	S. K. & W. R. R	1,248
Canton	A., T. & S. F. R. R	1,582
Carbon	K. C. R. R	952
Carbondale	A., T. & S. F. R. R	1,072
Carbon Hill	L. & S. W. R. R	1,122
Carliale	A., T. & S. F. R. R	3,178
Carlyle	K. C., L. & S. R. R	984
Carthage	A., T. & S. F. R. R	5,009
Cedar Grove	A., T. & S. F. R. R	1,237
Do...Junc	A., T. & S. F. R. R	778
Centralia	U. P. R. R	1,270
Chanute	K. C., L. & S. R. R	910
Do..junc. L. L. & G. R. R	M., K. & T. R. R	914
Chase	A., T. & S. F. R. R	1,708
Cherokee	K. C., Ft. S. & G. R. R	933
Cherryvale	K. C., L. & S. R. R	836
Chetopa	M., K. & T. R. R	832
Chirley Camp	Toner	2,106
Choteau	A., T. & S. F. R. R	764
Cicero	A., T. & S. F. R. R	1,306
Cimarron	A., T. & S. F. R. R	2,116
Circleville	St. J. & D. C. R. R	1,116
Clarksburgh	Ft. S., S. E. & M. R. R	890
Clay Center	J. C., & Ft. K. R. R	1,201
Cleveland	K. P. R. R	3,046
Clifton	J. C., & Ft. K. R. R	1,278
Climax	A., T. & S. F. R. R	1,018
Clinton	Toner	762
Clyde	J. C. & Ft. K. R. R	1,299
Coal Creek	Soloman R. R	1,197
Coal Vale	Ft. S., S. E. & M. R. R	832
Coffeyville	K. C., L. & S. R. R	728
Collyer	K. P. R. R	2.586
Colony, divide between Kan. & Ark. River	K. C., L. & S. R. R	1,121
Columbus	K. C., Ft. S. & G. R R	905
Concordia	J. C. & Ft. K. R. R	1,366
Conway	A., T. & S. F. R. R	1,527
Coolidge	A., T. & S. F. R. R	3,339
Corning	U. P. R. R	1,369
Council Grove	M., K. & T. R. R	1,238
Crane	S. K. & W. R. R	783
Crawford	A., T. & S. F. R. R	1,220
Cummings	A., T. & S. F. R. R	981
Deerfield	A., T. & S. F. R. R	2,933
Delphos	Soloman R. R	1.301
Derby	A., T. & S. F. R. R	1,271
De Soto	A., T. & S. F. R. R	790
Detroit	K. P. R. R	1,135
Dodge City	A., T. & S. F. R. H	2,475
Do.....Signal Station	U. S. Signal Office	2,512
Dorrance	K. P. R. R	1,730
Douglas	A., T. & S. F. R. R	1,194
Dundee	A., T. & S. F. R. R	1,895
Eagle Creek	A., T. & S. F. R. R	1,188
Eagle Tail	K. P. R. R	3,434
Easelton	K. C., L. & S. R. R	960
Easton	K. C. R. R	909
Edgerton	K. C., L. & S. R. R	962
Edwardsville	K. P. R. R	783
Effingham	U. P. R. R	1,144
Eldorado	A., T. & S. F. R. R	1,282
Elk	K. C. R. R	979
Ellinor	A., T. & S. F. R. R	1,154

Station.	Authority.	Elevation.
		Feet.
Ellinwood	A., T. & S. F. R. R	1,780
Ellis	K. P. R. R	2,117
Ellsworth	K. P. R. R	1,538
Elmdale	A., T. & S. F. R. R	1,193
Elmwood	Toner	775
Emporia	A., T. & S. F. R. R	1,132
Do..Junction M., K. & T	A., T. & S. F. R. R	1,132
Eskridge	A., T. & S. F. R. R	1,403
Eudora	A., T. & S. F. R. R	811
Eureka	A., T. & S. F. R. R	1,073
Fairfield	A., T. & S. F. R. R	1,060
Fairmont	K. P. R. R	955
Fall Leaf	K. P. R. R	809
Farlington	K. C., Ft. S. & G. R. R	988
Do	A. & N. R. R	914
Florence	A., T. & S. F. R. R	1,260
Fontana	K. C., Ft S. & G. R. R	928
Frankfort	U. P R. R	1,155
Fullerton	A., T. & S. F. R. R	1,091
Fulton	K. C., Ft. S. & G. R. R	813
Galesburg	M., K. & T. R. R	979
Galoa	A., T. & S. F. R. R	1,537
Garden City	A., T. & S. F. R. R	2,827
Gardner	Smithsonian Inst	800
Garfield	A., T. & S. F. R. R	2,066
Garnett	K. C., L. & S. R. R	1,056
Girard	K. C., Ft. S. & G. R. R	990
Glasco	Solomon R. R	1,321
Glendale	A., T. & S. F. R. R	849
Godfrey	K. C., Ft. S. & G. R. R	962
Gopher	K. P. R. R	3,318
Gorham	K. P. R. R	1,912
Grainfield	K. P. R. R	2,211
Grantville	K. P. R. R	877
Grasshopper Falls	K. C. R. R	917
Great Bend	A., T. & S. F. R. R	1,841
Greenleaf	U. P. R. R	1,462
Green Ridge	Toner	1,013
Grenola	S. K. & W. R. R	1,112
Grinnell	K. P. R. R	2,904
Half Mound	K. C. R. R	979
Halstead Junction, H. C. R. R	A., T. & S. F. R. R	1,386
Hamlin	St. J. & D. C. R. R	983
Hanover	St. J. & D. C. R. R	1,228
Harker, Fort	K. P. R. R	1,582
Hartford	M., K. & T. R. R	1,087
Hartland	A., T. & S. F. R. R	3,047
Haweville	A., T. & S. F. R. R	1,104
Hayes	K. P. R. R	1,991
Hazleton	K. P. R. R	1,114
Hepler	M., K. & T. R. R	1,002
Hevels	M., K. & C. R. R	914
Hiatteville	M., K. & T. R. R	1,003
Hiawatha	St. J. & D. C. R. R	1,094
Highland	A. & N. R. R	893
Hillsboro'	A., T. & S. F. R. R	1,424
Hillsdale	K. C., Ft. S. & G. R. R	903
Hoge	K. P. R. R	854
Hollenburgh	St. J. & D. C. R. R	1,259
Holliday	A., T. & S. F. R. R	753
Holton	K. C. R. R	1,026
Homer	K. P. R. R	1,874
Horners	A., T. & S. F. R. R	1,314
Horton	A., T. & S. F. R. R	1,186

Station.	Authority.	Elevation.
		Feet.
Howard	A., T. & S. F. R. R	1,006
Howell	A., T. & S. F. R. R	2,535
Hugo	Toner	4,937
Humboldt	K. C., L. & L. R. R	952
Hunds Station	K. C. R. R	835
Hunnewell	Sumner Co. R. R	1,102
Hutchinson	A., T. & S. F. R. R	1,524
Independence	K. C., L. & S. R. R	794
Iola	K. C., L. & S. R. R	955
Irving	U. P. R. R	1,152
Junction City	K. P. R. R	1,082
Kansas Falls	K. P. R. R	1,106
Kent	A., T. & S. F. R. R	1,491
Kingsley	A., T. & S. F. R. R	2,162
Kingsville	K. P. R. R	920
Labette	M., K. & T. R. R	864
La Cygne	K. C., Ft. S. & G. R. R	825
Ladore	M., K. & T. C. R	909
Lakeview	A., T. & S. F. R. R	828
Lakin	A., T. & S. F. R. R	2,989
Larkins	K. C. R. R	944
Larned	A., T. & S. F. R. R	1,993
Larned, Fort	Med. Dept., U. S. A	1,932
Laura	A., T. & S. F. R. R	1,638
Lawrence	A., T. & S. F. R. R	849
Do....K. P. crossing	A., T. & S. F. R. R	822
Leavenworth	K. P. R. R	765
Do.....Junction M. P. R. R	A., T. & S. F. R. R	764
Do.....Fort	Med. Dept., U. S. A	896
Do.....Signal Station	U. S. Signal Office	842
Lecompton	A. T. & S. F. R. R	844
Do	Smithsonian Inst	825
Lehigh	A., T. & S. F. R. R	1,520
Le Loup	K. C., L. & S. R. R	949
Lenape	K. P. R. R	781
Lenexa	K. C., Ft. S. & G. R. R	1,050
Le Roy	M., K. & T. R. R	994
Liberty	K. C., L. & S. R. R	744
Lindsborg	S. & S. W. R. R	1,332
Linwood	K. P. R. R	789
Little River	A., T. & S. F. R. R	1,572
Longton	S. K. & W. R. R	919
Loring	K. P. R. R	789
Louisville	St. J. & D. C. R. R	1,006
Lowell	S. C. & J. R. R	823
Lyons	A., T. & S. F. R. R	1,691
McCune	M., K. & C. R. R	924
McIntosh	A., T. & S. F. R. R	1,125
McLouth	A., T. & S. F. R. R	1,157
McPherson	A., T. & S. F. R. R	1,488
Madison	A., T. & S. F. R. R	1,068
Manhattan Junction, K. P. R. R	A., T. & S. F. R. R	1,000
Manville	St. J. & D. C. R. R	972
Marion Center	A., T. & S. F. R. R	1,299
Marmaton	M., K. & T. R. R	917
Marysville	St. J. & D. C. R. R	1,156
Mathewson	M., K. & C. R. R	853
Medina	K. P. R. R	853
Medway	A., T. & S. F. R. R	3,284
Memphis	Ft. S., S. E. & M. R. R	842
Menoken	K. P. R. R	902
Meriden	A., T. & S. F. R. R	964
Do..Junction	A., T. & S. F. R. R	945
Do..crossing L. S. & S. T. R. R	A., T. & S. F. R. R	976

Station.	Authority.	Elevation.
		Feet.
Milford	J. C. & Ft. K. R. R.	1,112
Minneapolis	Solomon R. R	1,257
Mitchell	A., T. & S. F. R. R	1,731
Moline	S. K. & W. R. R.	1,050
Monmouth	M., K. & C. R. R.	881
Monotony	K. P. R. R	3,774
Monrovia	U. P. R. R	1,054
Monument	K. P. R. R	3,181
Moores	K. P. R. R	915
Morehead	K. C., L. & L. R. R	900
Morganville	J. C. & F. K. R. R	1,238
Morse	A., T. & S. F. R. R	1,085
Mount Zion	K. P. R. R	1,654
Mulvane	A., T. & S. F. R. R	1,085
Muncy Siding	K. P. R. R	767
Muscotah	U. P. R. R	973
Neosho Falls	M., K. & T. R. R	980
Neosho Rapids	M., K. & T. R. R	1,076
Netawaka	St. J. & D. C. R. R	1,140
Nettleton	A., T. & S. F. R. R	2,112
Neutral	K. C., Ft. S. & G. R. R	862
New Cambria	K. P. R. R	1,189
Newman	K. P. R. R	861
New Salem	S. K. & W. R. R	1,242
Newton	A., T. & S. F. R. R	1,438
Nichols	A., T. & S. F. R. R	1,001
Nickerson	A., T. & S. F. R. R	1,592
North Topeka, K. P crossing	A., T. & S. F. R. R	872
North Robinson	St. J. & D. C. R. R	949
North Wichita	A., T. & S. F. R. R	1,294
Do crossing F. S. & W. R. R.	A., T. & S. F. R. R	1,302
Nortonville	A., T. & S. F. R. R	1,158
Norway	St. J. & D. C. R. R	1,041
Norwood	K. C., L. & S. R. R	938
Ochiltree	K. C., Ft. S. & G. R. R	1,078
Offerle	A., T. & S. F. R. R	2,261
Ogallah	K. P. R. R	2,367
Ogdensburgh	K. P. R. R	1,060
Olathe	A., T. & S. F. R. R	1,030
Osage	A., T. & S. F. R. R	1,075
Osage Mission	M., K. & T. R.R	890
Osawkee	A., T. & S. F. R. R	876
Oskaloosa	A., T. & S. F. R. R	989
Oswego	M., K. & T. R. R	895
Ottawa, Marias des Cygnes River	K. C., L. & S. R. R	896
Oxford	S. K. & W. R. R.	1,160
Paola	K. C., Ft. S. & G. R. R.	854
Pardee	Toner	1,155
Parker	Toner	921
Parkersville	M., K. & T. R. R	1,337
Parnell	A., T. & S. F. R. R	1,039
Parsons Junction, Neosho Division	M., K. & T. R. R	902
Pauline	A., T. & S. F. R. R	1,027
Pavilion	A., T. & S. F. R. R.	1,096
Pawnee	K. C., Ft. S. & G. R. R	988
Pawnee Rock	A., T. & S. F. R. R	1,039
Paw Paw	A., T. & S. F. R. R	1,110
Peabody	A., T. & S. F. R. R	1,349
Peace	Toner	1,613
Perry	Ft. S., S. E. & M. R. R	799
Perryville	K. P. R. R	852
Perth	A., T. & S. F. R. R	1,201
Petersburgh	Toner	2,224
Peterton	A., T. & S. F. R. R.	1,065

Station.	Authority.	Elevation.
		Feet.
Philips	A., T. & S. F. R. R	1,123
Pierceville	A., T. & S. F. R. R	2,750
Pilot Knob	K. P. R. R	945
Pleasant Hill Junction, with Mo. Pac. R. R.	A., T. & S. F. R. R	849
Pleasanton	K. C., Ft. S. & G. R. R	860
Pleasant Ridge	K. C. R. R	1,086
Plymouth	A., T. & S. F. R. R	1,135
Prairie City	K. C., L. & S. R. R	1,052
Prescott	K. C., Ft. S. & G. R. R	887
Princeton	K. C., L. & S. R. R	966
Raymond	A., T. & S. F. R. R	1,721
Raymore	A., T. & S. F. R. R	1,097
Readings	A., T. & S. F. R. R	1,073
Red Vermillion	St., J. & D. C. R. R	1,046
Reno	K. P. R. R	835
Richland	L. & S. W. R. R	901
Richmond	K. C., L. & S. R. R	1,017
Ridgeway	A., T. & S. F. R.R	2,514
Ridgway	Toner	903
Riley, Fort	K. P. R. R	1,072
Rock Creek	A., T. & S. F. R. R	1,057
Rome	S. C. R. R	1,216
Rossville	K. P. R. R	933
Russell	K. P. R. R	1,832
Ryan	St. J. & D. C. R. R	892
Sabetha	St. J. & D. C. R. R	1,308
Safford	A., T. & S. F. R. R	1,140
Saint Francis	Toner	906
Saint George	K. P. R. R	1,000
Saint Marys	K. P. R. R	955
Salem	K. P. R. R	1,558
Salina	K. P. R. R	1,225
Sand Spring	K. P. R. R	1,146
Sargent	Toner	3,425
Scott, Fort	M., K. &T. R. R	802
Scotts	K. C. R. R	1,025
Scranton	A., T. & S. F. R. R	1,099
Sedgwick Junction, with H. C. R. R	A., T. & S. F. R. R	1,369
Sedgwick City	A., T. & S. F. R. R	1,368
Seely	A., T. & S. F. R. R	1,162
Seneca	St. J. & D. C. R. R	1,154
Severance	St. J. & D. C. R. R	902
Severy	A., T. & S. F. R. R	1,098
Sheelock	A., T. & S. F. R. R	2,876
Sheridan	K. P. R. R	3,103
Sherlock		2,925
Short Creek	S. C. & J. R. R	893
Sibley	K. C., L. & S. R. R	817
Sidney	A., T. & S. F. R. R	2,785
Sigel		753
Silica		1,779
Silver Lake	K. P. R. R	915
Skiddy	M., K. & T. R. R	1,226
Soloman City	Solomon R. R	1,175
Do..Junction	Solomon R. R	1,172
Sother	U. P. R. R	1,179
South Haven	S. C. R. R	1,124
South Mound	M., K. & T. R. R	993
Spearville	A., T. & S. F. R. R	2,449
Spencer	A., T. & S. F. R. R	859
Springdale	A., T. & S. F. H. R	1,032
Spring Hill	K. C., Ft. S. & G. R. R	1,028
Stanley	A., T. & S. F. R. R	973
Steel City		1,277

Station.	Authority.	Elevation.
		Feet.
Sterling	A., T. & S. F. R. R	1,635
Stilson	K. C., Ft. S. & G. R. R	909
Strawn	M., K. & T. R. R	1,047
Strong City	A., T. & S. F. R. R	1,172
Summit "Santa Fé Ridge"	K. C., L. & S. R. R	1,068
Syracuse	A., T. & S. F. R. R	3,218
Tecumseh	A., T. & S. F. R. R	860
Terra Cotta	K. P. R. R	1,470
Thayer	K. C., L. & S	1,445
Tiblow	K. P. R. R	793
Tonganoxie	K. P. R. R	851
Topeka	A., T. & S. F. R. R	884
Troy	St. J. & D. C. R. R	1,091
Do..Junction	A. & W. R. R	1,150
Turner	A., T. & S. F. R. R	762
Udall	A., T. & S. F. R. R	1,272
Urbana	M., K. & T. R. R	931
Valley Center	A., T. & S. F. R. R	1,339
Valley Falls Junction, Kansas Cent. R. R	A., T. & S. F. R. R	907
Vermillion	U. P. R. R	1,198
Victoria	K. P. R. R	1,928
Vinland	K. C., L. & S. R. R	881
Wabaunsee	A., T. & S. F. R. R	1,011
Wakarusa	A., T. & S. F. R. R	946
Wa Keeney	K. P. R. R	2,456
Wakefield	J. C. & Ft. R. R. R	1,152
Walker	K. P. R. R	1,944
Wallace	K. P. R. R	3,301
Walnut	M., K. & T. R. R	931
Walnut Ridge	A., T. & S. F. R. R	1,199
Walthena	St. J. & D. C. R. R	816
Walton	A., T. & S. F. R. R	1,527
Wamego	K. P. R. R	1,000
Washington	St. J. & D. C. R. R	1,316
Waterville	U. P. R. R	1,183
Weir City	M., K. & C. R. R	921
Welda	K. C., L. & S. R. R	1,098
Wellington	A., T. & S. F. R. R	1,219
Wellsville	K. C., L. & S. R. R	1,041
Wetmore	U. P. R. R	1,153
White City	M., K. & T. R. R	1,476
White Cloud	A. & N. R. R	858
Whiting	U. P. R. R	1,126
Wichita	A., T. & S. F. R. R	1,291
Wilder	A., T. & S. F. R. R	770
Williamstown	K. P. R. R	851
Wilson	K. P. R. R	1,684
Winchester	K. C. R. R	1,164
Winfield	A., T. & S. F. R. R	1,112
Wolf River Crossing	St. J. & D. C. R. R	819
Wyandotte	Smithsonian Inst	707
Zarah, Fort		1,870

KENTUCKY.

Station.	Authority.	Elevation.
		Feet.
Aden	C. & O. R. R	626
Allensville	L., N. S. & N. A. R. R	552
Alms House	L., N. S. & N. A. R. R	425
Ashland	C. & O. R. R	544
Athens	C. & O. R. R	1,006
Auburn	L., N. S. & N. A. R. R	603
Bacon Creek	L., N. S. & N. A. R. R	619
Bakersport	Paducah & E. R. R	477
Bank Lick	L., C. & L. R. R	837
Bardstown	L., N. S. & N. A. R. R	635
Do .... Junction	L. N. S. & N. A. R. R	415
Beaver Dam	Paducah & E. R. R	492
Belmont	L., N. S. & N. A. R. R	429
Bethlehem	L., N. S. & N. A. R. R	730
Big Clifty	Paducah & E. R. R	733
Big Spring	L., N. S. & N. R. R	512
Bishops	C. S. R. R	887
Blanchet	C. S. R. R	968
Booth's	L., N. S. & N. A. R. R	423
Boston	L., N. S. & N. A. R. R	429
Bowling Green	L., N. S. & N. A. R. R	466
Bracht	C. S. R. R	934
Bridge Fork	C. S. R. R	1,318
Bristow	L., N. S. & N. A. R. R	515
Brodhead	L., N. S. & N. A. R. R	901
Brooks	L., N. S. & N. A. R. R	488
Brumfield	L., N. S. & N. A. R. R	1,012
Burgin	C. S. R. R	902
Cadentown	C. & O. R. R	1,034
Calvert City	Paducah & E. R. R	494
Campbellsburgh	L., C. & L. R. R	904
Cane Spring	L., N. S. & N. A. R. R	621
Caneyville	Paducah & E. R. R	450
Carrolton	L., C. & L. R. R	472
Catlettsburg	C. & O. R. R	544
Catnip Hill	C. S. R. R	990
Cave City	L., N. S. & N. A. R. R	611
Cave Spring	L., N. S. & N. A. R. R	586
Cayce	M. & O. R. R	400
Cecilia	Paducah & E. R. R	688
Cecilian Junction	L., N. S. & N. A. R. R	675
Cedar Grove	C. S. R. R	851
Chicago	L., N. S. & N. A. R. R	671
Cincinnati and Lexington Junction	L., N. S. & N. A. R. R	435
Clinton	M. & O. R. R	321
Colby	C. & O. R. R	1,023
Colesburgh	L., N. S. & N. A. R	423
Columbia	St. L., I. Mt. & S. R. R	313
Columbus	M. & O. R. R	309
Combs Ferry	E., L. & B. S. R. R	954
Corinth	C. S. R. R	968
Crab Orchard	L., N. S. & N. A. R. R	917
Crittenden	C. S. R. R	923
Cumberland Falls	C. S. R. R	1,260
Danville	C. S. R. R	970
Dixon	C. S. R. R	936
Donerail	C. S. R. R	897
Dry Ridge	C. S. R. R	964

Station.	Authority.	Elevation.
		Feet.
Dulaney	Paducah & E. R. R.	684
Duncannon	L., N. S. & N. A. R. R	987
Eagle	L., C. & L. R. R	473
Earlington	E., H. & N. R. R	370
East Kentucky Junction	C. & O. R. R	613
East View	Paducah & E. R. R.	812
Eddyville	Paducah & E. R. R.	487
Elizabethtown	L., N. S. & N. A. R. R	681
Elleston	L., C. & L. R. R.	593
Elm Lick	Paducah & E. R. R.	507
Enterprise	C. & O. R. R	831
Erlanger	C. S. R. R.	915
Eubanks	C. S. R. R.	1,187
Ewington	C. & O. R. R	992
Farmers	C. & O. R. R	668
Flat Rock	C. S. R. R	1,309
Franklin	L., N. S. & N. A. R. R	689
Gates	C. & O. R. R	819
Georgetown	C. S. R. R.	883
Gethsemane	L., N. S. & N. A. R. R	456
Gilberts Creek	L., N. S. & N. A. R. R.	828
Gilbertsville	Paducah & E. R. R.	482
Glasgow	L., N. S. & N. A. R. R	778
Do Junction	L., N. S. & N. A. R. R	621
Glencoe	L., C. & L. R. R.	550
Glendale	L., N. S. & N. A. R. R	638
Gordon	Paducah & E. R. R.	480
Gravel Switch	L., N. S. & N. A. R. R	894
Grayson Springs Station	Paducah & E. R. R.	709
Grear Coal Mines	C. S. R. R	1,325
Greendale	C. S. R. R	957
Green River	C. S. R. R	927
Greenville	Paducah & E. R. R.	537
Greenwood	C. S. R. R	1,207
Gum Sulphur	L., N. S. & N. A. R. R	.....
Guthrie	L., N. S. & N. A. R. R	525
Do Crossing L. & M. R. R	E., H. & N. R. R	545
Hadensville	L., N. S. & N. A. R. R	532
Hall's Gap	L., N. S. & N. A. R. R.	991
Hamilton	Paducah & E. R. R.	493
Harris	L., N. S. & N. A. R. R	1,007
Harrodsburgh Junction	C. S. R. R	915
Hatden's	L., N. S. & N. A. R. R.	821
Hedges	C. & O. R. R	976
Henderson, L. W. in Ohio River	E., H. & N. R. R	335
Do ....top of bank on railroad terminus	E., H. &. N. R. R	402
Herat	E., L. & B. S. R. R	619
Hickman	N. & N. R. R	301
High Bridge	C. S. R. R	777
Hinton	C. S. R. R	958
Hopkinsville	E., H. & N. R. R.	550
Horse Branch	Paducah & E. R. R	527
Do..... tunnel, surface	Paducah & E. R. R	782
Horse Cave	L., N. S. & N. A. R. R.	601
Hubers	L., N. S. & N. A. R. R.	456
Hyattsville	L., N. S. & N. A. R. R.	1,002
Independence	L., C. & L. R. R.	760
Jessamine	C. S. R. R	901
Jordan	M. & O. R. R.	404
Junction	E., L. & B. S. R. R.	618
Junction City	C. S. R. R	997
Kelly's Station	E., H. & N. R. R.	705
Kenton Heights	C. S. R. R	845
King's Mountain	C. S. R. R	1,183

Station.	Authority.	Elevation.
		Feet.
Kinkaid	C. S. R. R	877
Kuttawa	Paducah & E. R. R	487
La Grange	L., C. & L. R. R	860
Lancaster	L., N. S. & N. A. R. R	997
Lawton's Bluff	Paducah & E. R. R	506
Lebanon	L., N. S. & N. A. R. R	752
Lebanon Junction	L., N. S. & N. A. R. R	426
Leon	C. & O. R. R	598
Lewis Crossing, tunnel, surface	Paducah & E. R. R	611
Lexington	C. S. R. R	975
Do	C. & O. R. R	946
Do....Junction	L., C. & L. R. R	867
Liberty	L., C. & L. R. R	495
Litchfield	Paducah & E. R. R	710
Livingston	L., N. S. & N. A. R. R	856
Long Grove	Paducah & E. R. R	656
Loretto	L., N. S. & N. A. R. R	709
Louisville	L., N. S. & N. A. R. R	438
Do....L. W. above falls	L., N. S. & N. A. R. R	386
Do....Signal Station	U. S. Signal Office	530
Lowell	L., N. S. & N. A. R. R	797
Ludlow	C. S. R. R	550
Lulbegind	E., L. & B. S. R. R	1,052
McHenry	Paducah & E. R. R	485
McKinney	C. S. R. R	1,023
MacLeod	L., N. S. & N. A. R. R	608
McNary	Paducah & E. R. R	478
Madisonville	E., H. & N. R. R	435
Mason	C. S. R. R	939
Maurice	L., C. & L. R. R	506
Meadow Lawn	L., N. S. & N. A. R. R	420
Memphis Junction	L., N. S. & N. A. R. R	531
Mercers	Paducah & E. R. R	522
Mewe	E., L. & B. S. R. R	843
Millwood	Paducah & E. R. R	654
Mitchellsburgh	L., N. S. & N. A. R. R	967
Moran's Summit	L., N. S. & N. A. R. R	962
Morehead	C. & O. R. R	712
Moreland	C. S. R. R	1,101
Moscow	M. & O. R. R	313
Mount Guthrie	L., N. S. & N. A. R. R	1,119
Mount Savage	C. & O. R. R	601
Mount Sterling	C. & O. R. R	934
Mount Vernon	L., N. S. & N. A. R. R	1,111
Muhlenburgh	Paducah & E. R. R	570
Muldraugh	L., N. S. & N. A. R. R	738
Munfordville	L., N. S. & N. A. R. R	568
Nazareth	L., N. S. & N. A. R. R	691
Nelson Furnace	L., N. S. & N. A. R. R	432
New Haven	L., N. S. & N. A. R. R	442
New Hope	L., N. S. & N. A. R. R	486
Newport	L., C. & L. R. R	523
Nicholasville	C. S. R. R	960
Nolin	L., N. S. & N. A. R. R	658
Normal	C. & O. R. R	539
North Fork	L., N. S. & N. A. R. R	932
Nortonville	Paducah & E. R. R	492
Do....crossing E. & P. R. R	E., H. & N. R. R	410
Norwood	C. S. R. R	1,137
Oakland	L., N. S. & N. A. R. R	529
Old Deposit	L., N. S. & N. A. R. R	451
Olive Hill	C. & O. R. R	752
Olmstead	L., N. S. & N. A. R. R	561

Station.	Authority.	Elevation.
		Feet.
Olympia	C. & O. R. R.	751
Orel	L., N. S. & N. A. R. R	410
Otisville	Paducah & E. R. R	528
Otter Creek	L., N. S. & N. A. R. R.	662
Owensborough Junction	Paducah & E. R. R	495
Paducah	Paducah & E. R. R	484
Paint Lick	L., N. S. & N. A. R. R	792
Parksville	L., N. S. & N. A. R. R	1,050
Patton's Water Tank	C. S. R. R	1,143
Pendleton	L., C. & L. R. R	838
Penick	L., N. S. & N. A. R. R	928
Pine Grove	C. & O. R. R	960
Pine Hill	L., N. S. & N. A. R. R	964
Pine Knot	C. S. R. R	1,428
Pleasant Valley	L., N. S. & N. A. R. R	1,108
Pleasure Ridge Park	L., N. S. & N. A. R. R	445
Point Burnside	C. S. R. R	782
Preston	C. & O. R. R	741
Prewitt	C. & O. R. R	1,054
Princeton	Paducah & E. R. R	624
Pulaski	C. S. R. R	1,135
Quarry Switch	L., N. S. & N. A. R. R	461
Randolph	L., N. S. & N. A. R. R	435
Red Hill	L., N. S. & N. A. R. R	749
Richmond	L., N. S. & N. A. R. R	924
Do....Junction	L., N. S. & N. A. R. R	842
Richwood	C. S. R. R	939
Riley's	L., N. S. & N. A. R. R	912
Rineyville	L., N. S. & N. A. R. R	806
Robard's Station	E., H. & N. R. R	390
Rockfield	L., N. S. & N. A. R. R	566
Rockport, Green River	Paducah & E. R. R	485
Rocky Hill	L., N. S. & N. A. R. R	594
Roger's Gap	C. S. R. R	928
Rosine	Paducah & E. R. R	597
Rowlett's	L., N. S. & N. A. R. R	608
Russellville	L., N. S. & N. A. R. R	532
Sadieville	C. S. R. R	872
Saint Barnard	Paducah & E. R. R	488
Saint Charles	Paducah & E. R. R	509
Saint Mary's	L., N. S. & N. A. R. R	731
Salt Lick	C. & O. R. R	656
Samuel's	L., N. S. & N. A. R. R	650
Sandersville	C. S. R. R	961
Sayer's	L., N. S. & N. A. R. R	672
Science Hill	C. S. R. R	1,130
Scottsburgh	Paducah & E. R. R	667
Shepherdsville	L., N. S. & N. A. R. R	424
Sherman	C. S. R. R	939
Silver Creek	L., N. S. & N. A. R. R	802
Sloan's Valley	C. S. R. R	926
Smith's Grove	L., N. S. & N. A. R. R	605
Somerset	C. S. R. R	882
Sonora	L., N. S. & N. R. R	697
South Covington	L., C. & L. R. R	537
South Danville	L., N. S. & N. A. R. R	967
South Fork	C. S. R. R	991
South Union	L., N. S. & N. A. R. R	517
Sparta	L., C. & L. R. R	505
Spring Lick	Paducah & E. R. R	438
Stanford	L., N. S. & N. A. R. R	919
Stepstone	C. & O. R. R	777
Stevensburg	Paducah & E. R. R	662
Stithton	L., N. S. & N. A. R. R	683

Station.	Authority.	Elevation.
		Feet.
Strawberry	L., N. S. & N. A. R. R	430
Sulphur	L., C. & L. R. R	691
Tateville	C. S. R. R	887
Thompson's	C. & O. R. R	1,037
Tibbs	E., L. & B. S. R. R	967
Tip Top	L., N. S. & N. A. R. R	758
Tradewater	Paducah & E. R. R	507
Triplett	C. & O. R. R	950
Turner's	L., C. & L. R. R	748
Tygart	C. & O. R. R	777
Upton	L., N. S. & N. A. R. R	722
Valley	L., N. S. & N. A. R. R	410
Verona	L., C. & L. R. R	870
Vine Grove	L., N. S. & N. A. R. R	719
Walton	C. S. R. R	927
Waynesburgh	C. S. R. R	1,230
West Chatteroi Junction	C. & O. R. R	533
West Point	L., N. S. & N. A. R. R	410
Whippoorwill	L., N. S. & N. A. R. R	537
White Oak	C. S. R. R	971
White Plains	Paducah & E. R. R	477
Whitley	C. S. R. R	1,336
Whitney	C. S. R. R	872
Williamstown	C. S. R. R	958
Wilmore	C. S. R. R	887
Winchester	C. & O. R. R	964
Windom	C. S. R. R	1,034
Woodburn	L., N. S. & N. A. R. R	608
Woodland	L., N. S. & N. A. R. R	621
Worthville	L., C. & L. R. R	486
Zim	L., C. & L. R. R	672

LOUISIANA.

Station.	Authority.	Elevation.
		Feet.
Algiers	Morgan's L. & T. R. R	11
Baldwin	Morgan's L. & T. R. R	16
Bayou Sali	Morgan's L. & T. R. R	10
Berwick	Morgan's L. & T. R. R	6
Boeuf	Morgan's L. & T. R. R	2
Boutte	Morgan's L. & T. R. R	6
Broussardville	Morgan's L. & T. R. R	40
Carencro	Morgan's L. & T. R. R	45
Chatahoula	Morgan's L. & T. R. R	6
Chef Menteur	N. O., M. & T. R. R	9
Des Allemands	Morgan's L. & T. R. R	4
Franklin	Morgan's L. & T. R. R	13
Grand Coteau	Morgan's L. & T. R. R	51
Jeannerette	Morgan's L. & T. R. R	22
Lake Charles	Toner	22
Morgan City	Morgan's L. & T. R. R	6
New Iberia	Morgan's L. & T. R. R	22
New Orleans	Jackson & Gt. N. R. R	4
Do	Pontchartrain R. R	15
Do	N. O., M. & T. R. R	16
Do.....Signal Station	U. S. Signal Office	52
Opelousas	Morgan's L. & T. R. R	59
Pattersonville	Morgan's L. & T. R. R	9
Port Eads, South Pass, Signal Station	U. S. Signal Office	7
Raceland	Morgan's L. & T. R. R	6
Rigolets	N. O., M. & T. R. R	9
Shreveport	T. & P. R. R	198
Do..Signal Station	U. S. Signal Office	227
Slidell	N. O. & N. E. R. R	8
Sorrell	Morgan's L. & T. R. R	20
Surel	Morgan's L. & T. R. R	20
Terre Bonne	Morgan's L. & T. R. R	16
Tigerville	Morgan's L. & T. R. R	4
Vermillionville	Morgan's L. & T. R. R	42
Washington	Morgan's L. & T. R. R	42
West Pearl River	N. O. & N. E. R. R	30

MAINE.

Station.	Authority.	Elevation.
		Feet.
Abraham, Mount	Geol. Survey of Maine	3,388
Agamenticus, Mount	Toner	673
Alleguash, Lake	Water-power of Maine	950
Attean, Lake	Water-power of Maine	1,094
Auburn	Me. Cent. R. R	184
Augusta	Me. Cent. R. R	48
Bancroft	European & N. A. R. R.	333
Bangor	Me. Cent. R. R	13
Do..Thomas Hill	U. S. C. & G. S	242
Do..Exchange street	European & N. A. R. R	11
Do..Signal Station	U. S. Signal Office	20
Barker's Mountain	Toner	2,551
Basin Mills	European & N. A. R. R	56
Baskahegan, Lake	Water-power of Maine	400
Belfast, City Point	Me. Cent. R. R	29
Bethel	Grand Trunk R. R	646
Bowdoinham	Me. Cent. R. R	10
Brewer	Bucksport & Bangor R. R	34
Brewer Village	Bucksport & Bangor R. R	24
Brooks	Me. Cent. R. R	376
Brownfield	Port. & Ogden. R. R	396
Brunswick	Me. Cent. R. R	64
Bryant's Pond	Grand Trunk R. R	706
Bucksport	Bucksport and Bangor R. R	5
Bucksport Center	Bucksport and Bangor R. R	99
Burnham	Me. Cent. R. R	157
Conquogomoc Lake	Water-power of Maine	930
Chamberlain Lake	Water-power of Maine	926
Chesuncook, Lake	Water-power of Maine	900
Chiputneticook, Lake	Water power of Maine	382
Chiputneticook, Lake, Grand	Water-power of Maine	449
Churchill Lake	Water-power of Maine	914
Clinton	Me. Cent. R. R	133
Costigan	European & N. A. R. R	111
Cumberland Junction	Me. Cent. R. R	59
Cumberland	Me. Cent. R. R	56
Do	Grand Trunk R. R	88
Curtis Corner	Me. Cent. R. R.	331
Danforth	European & N. A. R. R	379
Danville Junc	Grand Trunk R. R	200
Denning's Lake	Toner	88
East Baldwin Station	Port. & Ogden. R. R	312
East Concord	Port. & Ogden. R. R	881
East Livermore	Me. Cent. R. R	327
Eastport, Signal Station	U. S. Signal Office	61
Eaton	European & N. A. R. R	400
Empire Road	Grand Trunk R. R	278
Enfield	European & N. A. R. R	190
Falmouth	Grand Trunk R. R	49
Fish River Lake	Water-power of Maine	660
Forest	European & N. A. R. R	435
Freeport	Me. Cent. R. R	127
Fryeburgh Station	Port. & Ogden. R. R	420
Gardiner	Me. Cent. R. R	23
Gilead	Grand Trunk R. R	711
Gray	Me. Cent. R. R	106
Great Works	European & N. A. R. R	85
Green	Me. Cent. R. R	297
Greenbush	European & N. A. R. R	124

Station.	Authority.	Elevation.
		Feet.
Hallowell	Me. Cent. R. R	54
Harwood's Road	Me. Cent. R. R	17
Howard	U. S. C. & G. S	269
Katahdin, Mount	Eastman	5,200
Kendall's Mills	Me. Cent. R. R	122
Kingman	European & N. A. R. R	325
Lambert Lake	European & N. A. R. R	417
Leeds Centre	Me. Cent. R. R	285
Leeds Crossing	Me. Cent. R. R	271
Leeds Depot	Me. Cent. R. R	266
Lewiston	Me. Cent. R. R	200
Lincoln	European & N. A. R. R	205
Lincoln Centre	European & N. A. R. R	167
Locke's Mills	Grand Trunk R. R	718
Long Lake	Water-power of Maine	603
Long Pond	Water-power of Maine	1,094
Lunenburgh	Port. & Ogden. R. R	850
Mattagamon	Water-power of Maine	850
Mattawamkeag	European & N. A. R. R	205
Mattinicus West Light	U. S. C. & G. S	37
Mechanic Falls	Grand Trunk R. R	298
Miles' Pond	Port. & Ogden. R. R	1,026
Milford	European & N. A. R. R	114
Milinoquet, Lake	Water-power of Maine	500
Monmouth	Me. Cent. R. R	266
Moosehead Lake	Water-power of Maine	1,023
Moosetocmaguntic Lake	Water-power of Maine	1,486
Mount Desert	U. S. C. & G. S	1,527
New Gloucester	Me. Cent. R. R	113
Newport	Me. Cent. R. R	200
North Leeds	Me. Cent. R. R	280
North Yarmouth	Grand Trunk R. R	100
Oak Hill	Me. Cent. R. R	125
Olamon	European & N. A. R. R	121
Oldtown	European & N. A. R. R	88
Orono	European & N. A. R. R	71
Orrington	Bucksport & Bangor R. R	146
Owl's Head Light	U. S. C. & G. S	85
Oxford	Grand Trunk R. R	331
Pamedumcook Lake	Water-power of Maine	500
Paris	Grand Trunk R. R	483
Passadumkeag	European & N. A. R. R	131
Pawnal	Grand Trunk R. R	143
Pigeon Hill	U. S. C. & G. S	315
Pittsfield	Me. Cent. R. R	210
Pleasant, Mount	Guyot	2,021
Pomgoowahem Lake	Water-power of Maine	914
Portage Lake	Water-power of Maine	625
Portland	Me. Cent. R. R	13
Do	Grand Trunk R. R	15
Do	Portland & Roch R. R	10
Do..copper bolt at G. T. R. R. freight house	Port. & Ogden. R. R	16
Do..Brownhall Hill	U. S. C. & G. S	176
Do..R. R. wharf	U. S. C. & G. S	4
Do..Signal Station	U. S. Signal Office	45
Pownal	Grand Trunk R. R	143
Prince Regent's Redoubt	U. S. C. & G. S	197
Ragged Mountain	U. S. C. & G. S	1,301
Rangeley Lake	Water-power of Maine	1,511
Richardson, Lake	Water-power of Maine	1,456
Richmond	Me. Cent. R. R	77
Richville Station (Standish)	Port. & Ogden, R. R	315

Station.	Authority.	Elevation.
		Feet.
Ripogenus, Lake	Water-power of Maine	878
Schoodic Lake	Water-power of Maine	300
Sebago, Lake	Water-power of Maine	247
Do.....Station (Standish)	Port. & Ogden. R. R	274
Do.....(water surface)	Port. & Ogden. R. R	263
Sebattis Mountain	U. S. C. & G. S	801
Sebec Lake	Water-power of Maine	375
South Gardiner	Me. Cent. R. R	25
South Orrington	Bucksport & Bangor R. R	34
South Paris	Grand Trunk R. R	389
South Winn	European & N. A. R. R	194
Square-and-Cross Lake	Water-power of Maine	587
Squawpan Lake	Water-power of Maine	580
Standish Plains (natural surface)	Port. & Ogden. R. R	299
Steep Falls Station (Standish)	Port. & Ogden. R. R	305
Strickland's Ferry	Me. Cent. R. R	305
Tenant's Harbor Light	U. S. C. & G. S	44
Thorndyke	Me. Cent. R. R	267
Tomat	European & N. A. R. R	375
Topsham	Me. Cent. R. R	43
Umbagog Lake	Water-power of Maine	1,256
Unity	Me. Cent. R. R	223
Vanceborough	European & N. A. R. R	394
Veazie	European & N. A. R. R	110
Walnut Hill	Me. Cent. R. R	180
Waterville	Me. Cent. R. R	117
Webster	European & N. A. R. R	68
West Baldwin Station	Port. & Ogden. R. R	364
West Bethel	Grand Trunk R. R	675
Westbrook	Me. Cent. R. R	101
Do....Station, crossing Port. & Roch. R. R	Port. & Ogden. R. R	19
West Falmouth	Me. Cent. R. R	43
West Paris	Grand Trunk R. R	483
White Head Light	U. S. C. & G. S	44
White Rock Station (Gorham)	Port. & Ogden. R. R	213
Wilderness	European & N. A. R. R	467
Windham Station (south)	Port. & Ogden. R. R	131
Winn	European & N. A. R. R	201
Winthrop	Me. Cent. R. R	220
Woodford's	Me. Cent. R. R	61
Wood Lake	Water-power of Maine	1,094
Wytopitlock	European & N. A. R. R	343
Yarmouth	Me. Cent. R. R	88
Do	Grand Trunk R. R	94
Do...Junction	Grand Trunk R. R	88

Station.	Authority.	Elevation.
		Feet.
Aberdeen	P. W. & B. R. R	758
Airey's	D. & D. R. R	74
Agricultural College	U. S. C. & G. S	258
Alesia	B. & H. R. R	702
Altamont	B. & O. R. R	2,620
Annapolis, B. M. (*a*)	U. S. C. & G. S	4
Do.... B. M. (*b*)	U. S. C. & G. S	4
Do.... B. M., church on West street	U. S. C. & G. S	43
Antietam Creek	W. Md. R. R	460
Ark Haven	C. & P. D. R. R	80
Arlington	W. Md. R. R	420
Avondale	W. Md. R. R	540
Bachman Val. Grove	B. & H. R. R	741
Bald Friar	C. & P. D. R. R	78
Baltimore	B. & O. R. R	24
Do... Canton wharf	W. Md. R. R	20
Do... east facade of tunnel	B. & P. R. R	67
Do... Pennsylvania avenue	B. & P. R. R	131
Do... LaFayette avenue	B. & P. R. R	164
Do... Calverton road	B. & P. R. R	133
Do... Frederick road	B. & P. R. R	154
Do... Mount Clare Station	B. & P. R. R	68
Do... President street depot	P. W. & B. R. R	9
Do... Signal Station	U. S. Signal Office	45
Barnesville	B. & O. R. R	500
Bartholows	B. & O. R. R	463
Bayview Junction, Union Railroad	P. W. & B. R. R	36
Beelers Summit	B. & O. R. R	678
Benning's	B. & P. R. R	35
Bladensburg, meeting house	U. S. C. & G. S	51
Bloomington—B. M. on top step northwest corner B. & O. Railroad bridge over Potomac River	U. S. C. & G. S	1,008
Blue Ridge Summit	W. Md. R. R	1,373
Bowie	B. & P. R. R	149
Boyds	B. & O. R. R	418
Breathedsville	B. & O. R. R	472
Brownsville	B. & O. R. R	535
Cambridge, high water at	D. & D. R. R	57
Do..... railroad grade	D. & D. R. R	62
Carrollton	W. Md. R. R	550
Charlestown	P. W. & B. R. R	39
Chase's	P. W. & B. R. R	20
Chewsville	W. Md. R. R	575
Claggetts	B. & O. R. R	619
Crisfield	E. S. R. R	3
Cumberland	Cumberland & Pennsylvania R. R	639
Do	Cumberland Turnpike	635
Do	Penna. R. R	642
Do	B. & O. R. R	639
Do..... B. M. on coping stone of feed-lock west terminus of Chesapeake and Ohio Canal	U. S. C. & G. S	624
Do..... Basin Chesapeake and Ohio Canal	C. & O. Canal	609
Dickerson's	C. & O. Canal	357
Double Pike Creek	W. Md. R. R	300
Eakil's Mill	B. & O. R. R	412

Station.	Authority.	Elevat
		F
East Federalsburgh	D. & D. R. R	
East New Market	D. & D. R. R	
Edgewood	P. W. & B. R. R	
Elkton	P. W. & B. R. R	
Ellerslie	B. & O. R. R	
Emory Grove Station, junction Western Maryland Railroad	B. & H. R. R	
Fairview	B. & H. R. R	
Frederick	Pa. R. R.	
Do	W. Md. R. R	
Do...Junction	B. & O. R. R	
Freelands	N. C. R. R	
Frostburgh	Cumberland Turnpike	1,
Do	Cumberland & Pennsylvania R. R	1,
Gaithersburgh	B. & O. R. R	
Galt's	Pa. R. R	
Georgetown	Pa. R. R	
Germantown	B. & O. R. R	
Glendale	B. & P. R. R	
Glen Falls	W. Md. R. R	
Glen Morris	W. Md. R. R	
Glyndon	W. Md. R. R	
Graceham	W. Md. R. R	
Green Mount	B. & H. R. R	
Greenwood	W. Md. R. R	
Grimes	Shenandoah Valley R. R	
Gunpowder Bridge	P. W. & B. R. R	
Hagerstown	Shenandoah Valley R. R	
Do	W. Md. R. R	
Do	Cumberland Valley R. R	
Do	B. & O. R. R	
Do....Junction	B. & O. R. R	
Do.....B. M. on water table of C. H. corner Washington and Jonathan streets	U. S. C. & G. S	
Hampstead	B. & H. R. R	
Hancock, B. M. on coping stone of lock 53, Chesapeake and Ohio Canal aqueduct	U. S. C. & G. S	
Do...B. M. on coping stone middle north side Chesapeake and Ohio Canal aqueduct	U. S C. & G. S	
Harmans	B. & P. R. R	
Harmony Grove	Pa. R. R	
Havre de Grace	Pa. R. R	
Howardsville	W. Md. R. R	
Hurlock's	D. & D. R. R	
Junction	W. Md. R. R	
Keedysville	B. & O. R. R	
Knowles	B. & O. R. R	
Ladiesburgh	Pa. R. R	
Lanham's	B. & P. R. R	
Linkwood	D. & D. R. R	
Linsted	U. S. C. & G. S	
Linwood	W. Md. R. R	
Lonaconing	Cumberland & Pennsylvania R. R	1,
Loys	W. Md. R. R	
Magnolia	P. W. & B. R. R	
Marriott	U. S. C. & G. S	
Martinsburg, junction with B. & O. R. R	Cumberland Valley R. R	
Maryland Heights	U. S. C. & G. S	1,
Mechanicstown	W. Md. R. R	

Station.	Authority.	Elevation.
		Feet.
Middleburgh	W. Md. R. R	415
Monocacy River	W. Md. R. R	280
Mount Airy	B. & O. R. R	813
Mount Hope	W. Md. R. R	440
Mount Savage	Cumberland & Pennsylvania R R	1,206
Do ..... Junction	B. & O. R. R	687
Do ..... Station	B. & O. R. R	703
Mount Vernon	N. C. R. R	131
New Midway	Pa. R. R	458
New Windsor	W. Md. R. R	440
North East	P. W. & B. R. R	43
Oakland	B. & O. R. R	2,371
Oakland	W. Md. R. R	380
Odenton	U. S. C. & G. S	164
Do..(A. & E. R. R)	B. & P. R. R	160
Owing's Mills	W. Md. R. R	480
Parkton	N. C. R. R	420
Patapsco	W. Md. R. R	360
Patuxent	U. S. C. & G. S	84
Do	B. & P. R. R	85
Pen Mar	W. Md. R. R	1,200
Perrymansville	P. W. & B. R. R	42
Perryville, Port Deposit Br. R. R	P. W. & B. R. R	21
Piedmont	Cumberland & Pennsylvania R. R	928
Pikesville	W. Md. R. R	435
Point of Rocks, junction with main line B. & O. R. R	B. & O. R. R	229
Port Deposit	C. & P. D. R. R	9
Potomac Bridge	Cumberland Valley R. R	376
Princess Anne	E. S. R. R	14
Relay Station	B. & O. R. R	66
Rohrersville	B. & O. R. R	591
Ritter's	Pa. R. R	309
Rockville	B. & O. R. R	421
Rocky Ridge	W. Md. R. R	370
Sabillasville	W. Md. R. R	1,120
Saint James	Shenandoah Valley R. R	467
Salisbury	E. S. R. R	26
Seabrook	B. & P. R. R	159
Severn	B. & P. R. R	166
Sharpsburgh	Shenandoah Valley R. R	445
Silver Spring	B. & O. R. R	336
Smithsburgh	W. Md. R. R	750
Soper	U. S. C. & G. S	469
Springfield	B. & P. R. R	167
Stabler	U. S. C. & G. S	571
Stimmer's Run	P. W. & B. R. R	24.50
Stoney Run	B. & P. R. R	61
Sugar-Loaf Mountain	U. S. C. & G. S	1,281
Susquehanna, Susquehanna River	P. W. & B. R. R	16
Sykesville	B. & O. R. R	410
Taneytown	Pa. R. R	493
Tannery	W. Md. R. R	610
Taylor	U. S. C. & G. S	95
Terra Cotta	B. & O. R. R	168
Timber Grove	W. Md. R. R	550
Timonium	N. C. R. R	381
Tuscarawa	B. & O. R. R	224
Union Bridge	W. Md. R. R	350
Washington Junction	B. & O. R. R	229
Webb	U. S. C. & G. S	236
Westminster	W. Md. R. R	700

Station.	Authority.	Elevation.
		Feet.
Weverton	B. & O. R. R	249
Williamsburgh	D. & D. R. R	95
Williamsport	W. Md. R. R	305
Do.....B. M. on top of stone of west side aqueduct C. & O. Canal	U. S. C. & G. S	358
Wilsons	B. & P. R. R	60
Winans	B. & P. R. R	29
Woodensburgh	B. & H. R. R	703
Woodsborough	Pa. R. R	400

Station.	Authority.	Elevation.
		Feet.
Acton, junction with Framingham & Lowell R. R	N., A. & B. R. R	44
Allston	Boston & Albany R. R	24
Amherst	N. L. N. R. R	258
Do	Mass. Cent. R. R	235
Ashburnham	Vt. & Mass. R. R	1,106
Do.....Summit	Cheshire R. R	1,084
Ashland	Boston & Albany R. R	184
Athol, junction with Vt. & Mass. R. R	Spring., Athol & Northern R.R	546
Attleborough	Bost. & Prov. R. R	129
Auburndale	Boston & Albany R. R	63
Ayer Junction	Worcester & Nashua R. R	230
Bald Peak	Guyot	2,624
Baldwinsville	Boston & Albany R. R	901
Do	Fitchburg R. R	891
Bandville	Mass. Cent. R. R	405
Bardwell	N. H. & Northampton R. R	238
Barnstable	Cape Cod R. R	57
Barre Plains	Boston & Albany R. R	588
Barrett's Junction, crossing N., L. & N. R. R.	Spring., Athol & Northern R.R	329
Becket	Bost. & Albany R. R	1,207
Belchertown	Mass. Cent. R. R	460
Belmont	Mass. Cent. R. R	73
Bernardstown	Conn. River R. R	359
Billerica	Boston & Albany R. R	110
Blackstone	Prov. & Worces. R. R	197
Bondville	Spring., Athol & Northern R.R	350
Boston, B. & M. R. R. station	Boston & Maine R. R	14
Do. sidewalk in front of B. & M. R. R. station	City Engineer	8
Do..Mass. Cent. R. R. station	Mass. Cent. R. R	10
Do..Fitchburg R. R. station	Fitchburg R. R	11
Do. sidewalk in front of Fitchburg R. R. station	City Engineer	6
Do..B. & P. R. R. station	Bost. & Prov. R. R	6
Do. sidewalk in front of B. & P. R. R. station	City Engineer	7
Do..B. & A. R. R. station	Boston & Albany R. R	10
Do..sidewalk in front of B. & A. R. R. station	City Engineer	7
Do..B. & L. R. R. station	Boston & Lowell R. R	12
Do..sidewalk in front of B. & L. R. R. station	City Engineer	6
Do. Signal Station	U. S. Signal Office	142
Boylston	Bost. & Prov. R. R	31
Braggsville	Boston & Albany R. R	243
Brighton	Boston & Albany R. R	24
Brookfield	Boston & Albany R. R	606
Brookline	Boston & Albany R. R	15
Do...Junction	Boston & Albany R. R	9
Brooks' Farm	Boston & Lowell R. R	30
Canton Junction	Bost. & Prov. R. R	101
Charlton	Boston & Albany R. R	888
Chester	Boston & Albany R. R	595
Chicopee	Conn. River R. R	79
Clarendon Hills	Bost. & Prov. R. R	50
Clinton	Worcester & Nashua R. R	309
Coldbrook	Boston & Albany R. R	672
College Hill	Boston & Lowell R. R	31
Concord	Fitchburg R. R	135
Cordaville	Boston & Albany R. R	248
Cottage Farm	Boston & Albany R. R	9
Dalton	Boston & Albany R. R	1,198

Station.	Authority.	Elevation.
		Feet.
Deerfield	Conn. River R. R	221
Dennyville	Mass. Cent. R. R	625
Dodgeville	Bost. & Prov. R. R	114
Dorchester Heights	U. S. C. & G. S	140
Douglass Summit	Boston & N. Y. R. R	630
Dunstable, road to Dunstable Station	N., A. & B. R. R	51
Do....Wall Hill	N., A. & B. R. R	88
Dwight's	Mass. Cent. R. R	245
Eagle Mills	Mass. Cent. R. R	555
East Brookfield	Boston & Albany R. R	621
East Douglas	Boston & N. Y. R. R	517
East Foxborough	Bost. & Prov. R. R	211
Eastham	Cape Cod R. R	18
Easthampton	N. H. & Northampton R. R	169
East Holliston	Boston & Albany R. R	169
East Junction	Bost. & Prov. R. R	108
East Mountain (copper bolt)	Appalachian Club	2,276
Do.....(south peak)	Appalachian Club	1,917
East Woburn	Boston, Lowell & Nashua R. R	33
Enfield	Spring., Athol & Northern R.R	415
Faneuil	Boston & Albany R. R	24
Farnum's	Prov. & Worces. R. R	284
Fitchburgh	Fitchburg R. R	430
Florence	N. H. & Northampton R. R	273
Forest Hills	Bost. & Prov. R. R	36
Foxborough	Framingham & Mansfield R. R	284
Framingham Center	Bost., Clinton & Fitchburg R.R	188
Franklin	Boston & N. Y. R. R	292
Fremont or N. Wareham	Cape Cod R. R	60
Gardner	Fitchburg R. R	1,009
Gilbertville	Boston & Albany R. R	546
Grafton	Boston & Albany R. R	368
Grantville	Boston & Albany R. R	140
Greenfield	V., M., T. & G. R. R	181
Green Lodge	Bost. & Prov. R. R	54
Greenwich	Spring., Athol & Northern R.R	455
Greenwich Village	Spring., Athol & Northern R.R	484
Greylock	Appalachian Club	3,535
Do		3,505
Groton	Worcester & Nashua R. R	303
Do.Cow Pond Brook	N., A. & B. R. R	92
Groton Junction	Worcester & Nashua R. R	230
Do	Fitchburg R. R	234
Hadley	Mass. Cent. R. R	122
Harvard	Worcester & Nashua R. R	288
Hatfield	Conn. River R. R	148
Haverhill	Boston & Maine R. R	33
Haydensville	N. H. & Northampton R. R	432
Heath	Bost. & Prov. R. R	25
Hinsdale	Boston & Albany R. R	1,431
Holden	Mass. Cent. R. R	758
Holliston	Boston & Albany R. R	191
Holyoke	Conn. River R. R	94
Holyoke, Mount	Toner	1,120
Hoosac, Mount	Toner	2,510
Do.....east summit over tunnel	V., M., T. & G. R. R. R	2,269
Hoosac Tunnel, east portal	Troy & Greenfield R. R	759
Do..... central shaft	Troy & Greenfield R. R	819
Do..... west portal	Troy & Greenfield R. R	759
Hudson	Mass. Cent. R. R	221
Huntington	Boston & Albany R. R	373
Hyannis	Cape Cod R. R	25
Hyde Park	Bost. & Prov. R. R	51
Indian Orchard	Boston & Albany R. R	241

Station.	Authority.	Elevation.
		Feet.
Jamaica Plain	Bost. & Prov. R. R	33
Jamesville	Boston & Albany R. R	564
Lake Crossing	Boston & Albany R. R	168
Lancaster	Worcester & Nashua R. R	259
Lawrence	Manch. & Lawrence R. R	65
Leeds	N. H. & Northampton R. R	356
Leominster	Fitchburg R. R	373
Lincoln	Fitchburg R. R	205
Littleton	Fitchburg R. R	228
Lowell	Bost., Lowell & Nashua R. R.	99
Do. Middlesex street	Boston & Lowell R. R	92
Lowell Junction	Lowell & Andover R. R	103
Lowell Rock Cut	Boston & Lowell R. R	108
Ludlow	Spring., Athol & North'n R. R.	239
Lunenburgh	Fitchburg R. R	375
Maces	Lowell & Andover R. R	151
Mansfield	Bost. & Prov. R. R	169
Do...junction with Bost. & Prov. R. R.	Framingham & Mansfi'd R. R.	172
Marlborough	Bost., Clinton & Fitch. R. R	378
Melrose	Boston & Maine R. R	62
Metcalf's	Boston & Albany R. R	242
Middleborough	Cape Cod R. R	96
Middlefield	Boston & Albany R. R	918
Midfield Centre	Framingham & Mansfi'd R. R.	171
Midfield Junction	Framingham & Mansfi'd R. R.	136
Milford	Boston & Albany R. R	244
Millbury	Boston & Albany R. R	393
Miller's Falls	N. L. N. R. R	292
Millville	Prov. & Worces. R. R	208
Montague Depot	V., M., T. & G. R. R	129
Monument	Cape Cod R. R	7
Mystic	Boston & Lowell R. R	20
Nantasket	U. S. C. & G. S	128
Do...Tower's Tavern	U. S. C. & G. S	11
Nantucket Cliff, Nantucket	U. S. C. & G. S	58
Natick	Boston & Albany R. R	170
Newburyport	U. S. C. & G. S	124
New Salem	Spring., Athol & North'n R. R.	522
Newton	Boston & Albany R. R	46
Newtonville	Boston & AlbanyR. R	57
North Adams	Troy & Greenfield R. R	686
Northampton	Conn. River R. R	125
North Ashburnham	Cheshire R. R	1,066
North Billerica	B. & L. R. R	120
Northborough	Bost., Clinton & Fitch. R. R	296
Northbridge	Prov. & Worces. R. R	269
North Dana	Spring., Athol & North'n R. R.	462
North Eastham	Cape Cod R. R	54
North Hatfield	Conn. River R. R	172
North Wilbraham	Boston & Albany R. R	264
North Wrentham	Boston & N. Y. R. R	222
Oakdale	Worcester & Nashua R. R	382
Old Furnace	Mass. Cent. R. R	561
Do	Boston & Albany R. R	581
Orleans	Cape Cod R. R	44
Palmer	Boston & Albany R. R	336
Pepperill	Worcester & Nashua R. R	205
Pittsfield	Bos on & Albany R. R	1,013
Pratt's Junction	Boston, Clinton & Fitchburg R. R.	429
Quinsigamond Lake	Toner	361
Readville	Bost. & Prov. R. R	61
Rice's Crossing	Boston & Albany R. R	106
Richmond	Boston & Albany R. R	1,047

Station.	Authority.	Elevation.
		Feet.
Richmond Furnace	Boston & Albany R. R.	1,001
Riverside	Boston & Albany R. R.	64
Rochdale	Boston & Albany R. R.	721
Roxbury	Bost. & Prov. R. R.	20
Russell	Boston & Albany R. R.	273
Rutland Summit	Mass. Cent. R. R	1,043
Sandwich	Cape Cod R. R	13
Saundersville	Prov. & Worces. R. R.	311
Sawyer's Mills	Mass. Cent. R. R	301
Shaker Village	Boston & Albany R. R.	1,114
Sharon	Bost. & Prov. R. R.	220
Sharon Heights	Bost. & Prov. R. R.	260
Shelburne Falls	Troy & Greenfield R. R	430
Sherborn	Framingham & Mansfield R. R	171
Shirley	Fitchburg R. R	282
Smith's	Spring, Athol & Northern R. R	424
Smith's Ferry	Conn. River R. R	122
Somerville	Fitchburg R. R	8
Somerville Centre	Boston & Lowell R. R	34
South Acton	Fitchburg R. R	190
Southampton	N. H. & Northampton R. R.	195
South Ashburnham Junction	Cheshire R. R	1,014
South Athol	Spring, Athol & Northern R. R	561
Southborough	Boston, Clinton & Fitchburg R. R.	307
South Dedham	Boston & N. Y. R. R	141
South Deerfield	Conn. River R. R.	207
South Framingham	Boston & Albany R. R	163
South Lancaster	Worces. & Nashua R. R	272
South Lawrence	Boston & Maine R. R	49
South Spencer	Boston & Albany R. R	704
Southville	Boston & Albany R. R	263
South Walpole	Framingham & Mansfield R.R.	227
South Wellfleet	Cape Cod R. R.	14
Southwick	N. H. & Northampton R. R	242
South Worcester	Prov. & Worces. R. R	463
Springfield	Boston & Albany R. R	70
Do....Indian Orchard Station	Boston & Albany R. R	175
Do....Armory Hill Station	N. Y. & N. E. R. R	204
Do....Signal Station	U. S. Signal Office	120
Spring Hill	Cape Cod R. R	24
State Line, Massachusetts and New York	Boston & Albany R. R	914
Sterling Junction	Worcester & Nashua R. R	436
Still River	Worcester & Nashua R. R	243
Stone Hill, Williamstown	Appalachian Club	1,066
Stony Brook	Fitchburg R. R	91
Sudbury	Mass. Cent. R. R	127
Summit Station	Worces. & Nashua R. R	619
Sunderland	Mass. Cent. R. R	120
Sunset Rock	Appalachian Club	1,902
Sutton	Prov. & Worces. R. R	331
Tatham	Boston & Albany R. R	129
Templeton	Boston & Albany R. R	964
Tewksbury	Lowell & Andover R. R	124
Thatcher's Island, Signal Station	U. S. Signal Office	48
Thorndike	Boston & Albany R. R	345
Tom, Mount	Conn. River R. R	123
Turner's Falls	N. H. & Northampton R. R	170
Uxbridge	Prov. & Worces. R. R	231
Wachusett Mountain	Guyot	2,018
Walpole Junction, B., H. & E. R. R.	Framingham & Mansfield R. R	157
Waltham	Fitchburg R. R	45
Ware	Boston & Albany R. R	489
Wareham	Cape Cod R. R	5

Station.	Authority.	Elevation.
		Feet.
Warren	Boston & Albany R. R	593
Washington	Boston & Albany R. R	1,437
Waterford	Prov. & Worces. R. R	188
Waterville	Boston & Albany R. R	918
Waverly	Mass. Cent. R. R	132
Wayland	Mass. Cent. R. R	113
Wellesley	Boston & Albany R. R	140
Wellfleet	Cape Cod R. R	14
West Acton	Fitchburg R. R	221
West Barnstable	Cape Cod R. R	37
West Berlin	Mass. Cent. R. R	295
Westborough	Boston & Albany R. R	300
West Boylston	Worcester & Nashua R. R	442
West Brimfield	Boston & Albany R. R	391
West Brookfield	Boston & Albany R. R	604
West Deerfield, junction with T. & G. R. R.	Mass. Cent. R. R	267
Westfield	Boston & Albany R. R	147
West Fitchburgh	Fitchburg R. R	539
Westford, Stony Brook R. R	N., A. & B. R. R	102
West Medford	Boston & Lowell R. R	21
Westminster	Fitchburg R. R	704
West Newton	Boston & Albany R. R	55
Weston	Mass. Cent. R. R	65
Do	Fitchburg R. R	95
West Springfield	Boston & Albany R. R	100
West Walpole	Boston & N. Y. R. R	211
West Ware	Spring, Athol & Northern R. R	387
West Warren	Boston & Albany R. R	514
Whately	Conn. River R. R	186
Whitins	Prov. & Worces. R. R	268
Whitney's	Boston & Albany R. R	166
Williamsburgh	N. H. & Northampton R. R	492
Williams College, old observatory	Appalachian Club	708
Williamstown	Troy & Greenfield R. R	580
Williamsville	Boston & Albany R. R	833
Willimansett	Conn. River R. R	77
Wilmington	Boston & Lowell R. R	97
Wilmington Junction	Boston & Maine R. R	88
Winchendon	Boston & Albany R. R	993
Winchester	Bost., Lowell & Nashua R. R	27
Wood's Holl, Signal Station	Signal Office	35
Worcester, Union Station	Boston & Albany R. R	473
Do....Lincoln Square Station	Boston & Albany R. R	475
Do....South Worcester Junction	Boston & Albany R. R	477
Yarmouth	Cape Cod R. R	40

Station.	Authority.	Elevation.
		Feet.
Abronia	L. S. & M. S. R. R	714
Ada	D., G. H. & M. R. R.	666
Adrian	L. S. & M. S. R. R.	810
Alamo	K. & S. H. R. R	765
Alba	G. R. & Ind. R. R	1,177
Albion	Mich. Cent. R. R	943
Allegan	L. S. & M. S. R. R	708
Allen's	L. S. & M. S. R. R	1,064
Alpena, Signal Station	U. S. Signal Office	609
Amadore	P. H. & N. W. R. R	776
Anderson	P. H. & N. W. R. R	742
Ann Arbor	Mich. Cent. R. R	771
Argenta	L. S. & M. S. R. R	772
Arland	G. R. V. R. R	931
Ashton	G. R. & Ind. R. R	1,152
Attica	C. & G. T. R. R	898
Augusta	Mich. Cent. R. R	789
Austin Lake	G. R. & Ind. R. R	862
Avery's	Mich. Cent. R. R	655
Bagley	J., L. & S. R. R	1,285
Bald Tom, Geodetic Station	U. S. Lake Survey	822
Baldwin's	Ft. W., J. & S. R. R.	1,011
Do...surface water in north branch Kalamazoo	Ft. W., J. & S. R. R	1,002
Balmer's	P. H. & N. W. R. R	744
Bancroft	C. & G. T. R. R	856
Bancroft	M., H. & O. R. R	936
Bankers	Ft. W., J. & S. R. R.	1,067
Barron Lake	Mich. A. L. R. R	768
Batavia	L. S. & M. S. R. R.	946
Battle Creek	Mich. Cent. R. R	819
Bay City	D. & B. C. R. R.	592
Do..Junction	D. & B. C. R. R	604
Bay View	G. R. & Ind. R. R.	616
Beaver Lake	J., L. & S. R. R	1,254
Bedford	Mich. Cent. R. R	809
Do. Geodetic Station	U. S. Lake Survey	679
Belmont	G. R. & Ind. R. R	661
Belsay	C. & G. T. R. R.	777
Benedicts	A. & D. R. R.	900
Berlamont	K. & S. H. R. R	700
Berlin	D., G. H. & M. R R	687
Bertrand, Geodetic Station	U. S. Lake Survey	929
Big Rapids	G. R. & Ind. R. R	916
Do....G. R. & I. crossing	D., L. & N. R. R	1,001
Birmingham	D., G. H. & M. R. R	779
Blanchard	D., L. & N. R. R	930
Blissfield	L., S. & M. S. R. R	684
Do..Geodetic Station	U. S. Lake Survey	687
Bloomingdale	K. & S. H. R. R	731
Bond's Mill	G. R. & Ind. R. R.	1,416
Boston Mine	M., H. & O. R. R	1,562
Bowen	G. R. V. R. R	734
Boyne Falls	G. R. & Ind. R. R.	712
Bradley	G. R. & Ind. R. R.	757
Brighton	D., L. & N. R. R	929
Bronson	L. S. & M. S. R. R	927
Do. Geodetic Station	U. S. Lake Survey	998

Station.	Authority.	Elevation.
		Feet.
Brownells	K. & S. H. R. R	938
Bruce	M., H. & O. R. R	1,258
Buchanan	Mich. Cent. R. R	733
Bunday, Geodetic Station	U. S. Lake Survey	1,284
Burlington	Mich. A. L. R. R	947
Burnt Bluff, Geodetic Station	U. S. Lake Survey	817
Burr Oak	L. S. & M. S. R. R	896
Byers	G. R. & Ind. R. R	902
Byron Centre	L. S. & M. S. R. R	740
Cadillac	G. R. & Ind. R. R	1,292
Caledonia	G. R. V. R. R	799
Calumet	M. R. R. R	1,228
Calvin, Geodetic Station	U. S. Lake Survey	1,011
Capac	C. & G. T. R. R	817
Carlisle, Geodetic Station	U. S. Lake Survey	914
Carp	M., H. & O. R. R	1,400
Carpenters	D. & B. C. R. R	801
Carp River Furnace	M., H. & O. R. R	625
Carsonville	C., D. & C. G. T. J. R. R	768
Cassopolis	Mich. A. L. R. R	881
Cedar Springs	G. R. & Ind. R. R	846
Centerville	Mich. A. L. R. R	813
Ceresco	Mich. Cent. R. R	892
Chadwick	D., L. & N. R. R	856
Champion	M., H. & O. R. R	1,597
Do...Mine	M., H. & O. R. R	1,715
Charlesworth	L., S. & M. S. R. R	916
Charlotte	G. R. V. R. R	906
Chelsea	Mich. Cent. R. R	913
Cheney	J., L. & S. R. R	1,203
Chesaning	J., L. & S. R. R	632
Chester	G. R. V. R. R	883
Chicago Junction	D., L. & N. R. R	874
Child's Mill	G. R. & Ind. R. R	680
Chowlay	D., M. & M. R. R	617
Clarendon	Mich. A. L. R. R	966
Clarksburg	M., H. & O. R. R	1,544
Clarkston	D., G. H. & M. R. R	1,008
Clayton	L. S. & M. S. R. R	905
Cleveland Mine	M., H. & O. R. R	1,427
Cliff's Siding	M., H. & O. R. R	1,661
Clinton	L. S. & M. S. R. R	832
Clyde	J., L. & S. R. R	767
Colbys	D., L. & N. R. R	867
Coldwater	L., S. & M. S. R. R	983
Collins	D. L. & N. R. R	777
Colon	Mich. A. L. R. R	838
Columbia	K. & S. H. R. R	682
Columbia and Kloman Mine	M. H. & O. R. R	1,510
Columbiaville	D. & B. C. R. R	777
Colwell	D., L. & N. R. R	914
Comstock	Mich. Cent. R. R	782
Concord	Mich. A. L. R. R	987
Conadit	L. S. & M. S. R. R	952
Conger	G. R. & Ind. R. R	912
Constantine	L. S. & M. S. R. R	803
Cooper	G. R. & Ind. R. R	772
Do	L. S. & M. S. R. R	749
Coopersville	D., G. H. & M. R. R	646
Coral	D., L. & N. R. R	897
Coreys	Mich. A. L. R. R	871
Corunna	D., G. H. & M. R. R	776
Crapo	C. & G. T. R. R	777
Crofton	G. R. & Ind. R. R	1,040

Station.	Authority.	Ele
Crosswell	P. H. & N. W. R. R.	
Daileys	Mich. A. L. R. R.	
Dalliba Mine	M. H. & O. R. R.	
Dana	D., L. & N. R. R	
Danby	D., L. & N. R. R	
Davisburgh	D., G. H. & M. R. R	
Davison	C. & G. T. R. R.	
Dayton	Mich. Cent. R. R	
Dearborn	Mich. Cent. R. R	
Decatur	Mich. Cent. R. R.	
Deerfield	L. S. & M. S. R. R.	
Delta	D., L. & N. R. R	
Dennison	D., G. H. & M. R. R	
Dentons	Mich. Cent. R. R.	
Detroit	Mich. Cent. R. R.	
Do Signal Station	U. S. Signal Office	
Devereux	L. S. & M. S. R. R.	
Dexter	Mich. Cent. R. R.	
Dickson	D., L. & N. R. R	
Dimondale Crossing	L. S. & M. S. R. R.	
Divide, Geodetic Station	U. S. Lake Survey	
Dorr	L. S. & M. S. R. R.	
Dowagiac	Mich. Cent. R. R.	
Drayton Plains	D., G. H. & M. R. R	
Dundee, Geodetic Station	U. S. Lake Survey	
Durand	D., G. H. & M. R. R.	
Do..Crossing D. G. H. & M. R. R. (grade)	C. & G. T. R. R	
Durton	D., M. & M. R. R.	
Eagle	D., L. & N. R. R	
Eagle Mill	M., H. & O. R. R	
Eagle Mills	L. S. & M. S. R. R	
East Saginaw	J., L. & S. R. R.	
Eaton Rapids	G. R. V. R. R.	
Do.....G. R. V. R. R. crossing	L., S. & M. S. R. R	
Edgeton	G. R. & Ind. R. R	
Edmore	D., L. & N. R. R.	
Edwards Mine	M., H. & O. R. R	
Elba	C. & G. T. R. R	
Elmira	G. R. & Ind. R. R.	
Elmwood	D. L. & N. R. R	
Emmet	C. & G. T. R. R	
Empire Mine	M., H. & O. R. R	
Escanaba, Signal Station	U. S. Signal Office	
Excelsior Furnace	M. H. & O. R. R.	
Fairfield, Geodetic Station	U. S. Lake Survey	
Fenton	D., G. H. & M. R. R	
Fenwick	D., L. & N. R. R	
Ferrysburgh	D., G. H. & M. R. R	
Fishdam River, Geodetic Station	U. S. Lake Survey	
Fisher	G. R. & Ind. R. R	
Fishers	D., L. & N. R. R	
Fleming	D., L. & N. R. R	
Flint	C. & G. T. R. R	
Flowerfield	L. S. & M. S. R. R	
Forrest	J., L. & S. R. R.	
Fowler	D., G. H. & M. R. R	
Fowlerville	D., L. & N. R. R	
Francisco	Mich. Cent. R. R	
Frazer	C., D. & C. G. T. J. R. R	
Fyfe Lake	G. R. & Ind. R. R	
Gaines	D., G. H. & M. R. R.	
Galesburgh	Mich. Cent. R. R	
Galion	Mich. Cent. R. R	

Station.	Authority.	Elevation.
		Feet.
Gaylord	J., L. & S. R. R	1,349
Geddes	Mich. Cent. R. R	743
Geneva	K. & S. H. R. R	695
Genoa	D., L. & N. R. R	978
Gillett's Lake		932
Glenwood	Mich. Cent. R. R	751
Gobles	K. & S. H. R. R	803
Goodisons	D. & B. C. R. R	842
Gowen	D., L. & N. R. R	848
Grace Furnace	M., H. & O. R. R	632
Graffville	D., L. & N. R. R	969
Grand Haven	D., G. H. & M. R. R	594
Do ..... Signal Station	U. S. Signal Office	620
Grand Island Geodetic Station	U. S. Lake Survey	990
Grand Junction	C. & M. L. S. R. R	678
Grand Ledge	D., L. & N. R. R	860
Grand Rapids	L., S. & M. S. R. R	605
Do	D., G. H. & M. R. R	639
Grand Trunk Junction	L., S. & M. S. R. R	586
Grandville	L., S. & M. S. R. R	628
Grant Center	P. H. & N. W. R. R	745
Grass Lake	Mich. Cent. R. R	986
Gratiot Center	P. H. & N. W. R. R	612
Grayling	J., L. & S. R. R	1,135
Greenfield	D., L. & N. R. R	636
Green Oak	D., L. & N. R. R	893
Greenville	D., L. & N. R. R	819
Greenwood	J., L. & S. R. R	824
Hammond	G. R. V. R. R	754
Hancock	M. R. R. R	607
Hanover	Ft. W., J. & S. R. R	1,114
Haring	G. R. & Ind. R. R	1,322
Hastings	G. R. V. R. R	791
Hilliard	L., S. & M. S. R. R	719
Hillsdale	L., S. & M. S. R. R	1,095
Do..Geodetic Station	U. S. Lake Survey	1,239
Hobert	G. R. & Ind. R. R	1,307
Holly	D., G. H. & M. R. R	938
Homer Air Line Crossing	L., S. & M. S. R. R	972
Hopkins	L., S. & M. S. R. R	703
Horse Shoe Lake, low water	Ft. W., J. & S. R. R	1,054
Houghton, Mount	Foster & Whitney	1,511
Howard City	G. R. & Ind. R. R	872
Hudson	L., S. & M. S. R. R	945
Humboldt	M., H. & O. R. R	1,535
Humboldt Mine	M., H. & O. R. R	1,557
Hunter's Creek	D. & B. C. R. R	917
Huron Mountain, Geodetic Station	U. S. Lake Survey	1,532
Huron, Lake	U. S. Lake Survey	582
Ida	L., S. & M. S. R. R	632
Imlay City	C. & G. T. R. R	830
Inaple Hill	G. R. & Ind. R. R	887
Ingersoll	D., L. & N. R. R	861
Ionia	D., L. & N. R. R	659
Irving	G. R. V. R. R	745
Ishpeming	M., H. & O. R. R	1,443
Isle Royal, Geodetic Station	U. S. Lake Survey	1,062
Ives' Hill, Geodetic Station	U. S. Lake Survey	1,632
Jackson	L., S. & M. S. R. R	928
Do	Mich. Cent. R. R	927
Jackson, Mich. C. R. R., crossing on Grand River	Ft. W., J. & S. R. R	931
Jackson Junction	Mich. Cent. R. R	942
Jackson Mine	M., H. & O. R. R	1,425

Station.	Authority.	Elevation.
		Feet.
Jeddo	P., H. & N. W. R. R	73[illegible]37
Jones	Mich. A. L. R. R	91[illegible]16
Jonesville	L., S. & M. S. R. R	1,09[illegible]97
Do	Ft. W., J. & S. R. R	1,05[illegible]56
Do....crossing of L. S. & M. S. R. R., old line	Ft. W., J. & S. R. R	1,07[illegible]77
Kalamazoo	L. S. & M. S. R. R	77[illegible]77
Kalkaska	G. R. & Ind. R. R	1,02[illegible]22
Kawkawlin	J., L. & S. R. R	59[illegible]07
Kendall	K. & S. H. R. R	75[illegible]92
Keystone Mine	M., H. & O. R. R	1,6[illegible]67
Kiddville	D., L. & N. R. R	8[illegible]02
Kingsley	P. H. & N. W. R. R	7[illegible]36
Klinger Lake	L. S. & M. S. R. R	8[illegible]90
Lake Superior Mine	M., H. & O. R. R	1,4[illegible]47
Laingsburg	J., L. & S. R. R	8[illegible]06
L'Anse	M., H. & O. R. R	6[illegible]08
Lansing	J., L. & S. R. R	8[illegible]52
Do	L. S. & M. S. R. R	8[illegible]27
Do	C. & G. T. R. R	8[illegible]40
Lapeer	C. & G. T. R. R	[illegible]30
Lawton	Mich. Cent. R. R	[illegible]78
Leelsville	G. R. & Ind. R. R	1,[illegible]50
Lenawee Junction	L. S. & M. S. R. R	[illegible]14
Leoni	Mich. Cent. R. R	[illegible]80
Leroy	G. R. & Ind. R. R	1,[illegible]32
Linden	D., G. H. & M. R. R	[illegible]74
Litchfield	L. S. & M. S. R. R	1,[illegible]07
Livonia	D., L. & N. R. R	[illegible]69
Lockwood	G. R. & Ind. R. R	[illegible]82
Lowell	D., G. H. & M. R. R	[illegible]641
Lowthian Mine	M., H. & O. R. R	1,[illegible]497
Lyons	D., L. & N. R. R	[illegible]734
McBride's	D., L. & N. R. R	[illegible]942
McKay's Mountain	Foster & Whitney	1,[illegible]627
McKinnie's	D., L. & N. R. R	[illegible]647
McOmber Mine	M., H. & O. R. R	1,[illegible]458
Macon	A. & D. R. R	[illegible]870
Magnetic Mine	M., H. & O. R. R	1,[illegible]563
Mancelona	G. R. & Ind. R. R	1,[illegible]119
Manchester	L. S. & M. S. R. R	[illegible]907
Manganese Mine	M., H. & O. R. R	1,[illegible]503
Mangers	D. & B. C. R. R	[illegible]597
Manton	G. R. & Ind. R. R	1,[illegible]142
Maple Valley	D., L. & N. R. R	[illegible]925
Marengo	Mich. Cent. R. R	[illegible]921
Marquette	M., H. & O. R. R	[illegible]649
Do	D., M. & M. R. R	[illegible]622
Do....Signal Station	U. S. Signal Office	[illegible]673
Marshall	Mich. Cent. R. R	[illegible]898
Marshfield	D., L. & N. R. R	1,[illegible]011
Martin	G. R. & Ind. R. R	[illegible]827
Mason	J., L. & S. R. R	[illegible]883
Mattawan	Mich. Cent. R. R	[illegible]860
Mecosta	D., L. & N. R. R	[illegible]962
Melrose	G. R. & Ind. R. R	[illegible]677
Mendon	G. R. & Ind. R. R	[illegible]842
Meridian	C. & G. T. R. R	[illegible]850
Do	D., L. & N R. R	[illegible]885
Mesnard, Geodetic Station	U. S. Lake Survey	[illegible],124
Metamora	D. & B. C. R. R	[illegible],055
Michigamme	M., H. & O. R. R	[illegible],584
Michigamme Mine	M., H. & O. R. R	[illegible],552
Michigan Furnace	M., H, & O. R. R	[illegible],537

Station.	Authority.	Elevation.
		Feet.
n, Lake	U. S. Lake Survey	582
ille	G. R. V. R. R	717
›k	D., L. & N. R. R	938
›ek	G. R. & Ind, R. R	625
on	D. & B. C. R. R	757
Geodetic Station	U. S. Lake Survey	896
kee Junction	Grand Trunk R. R	625
kee Mine	M., H. & O. R. R	1,562
	G. R. & Ind. R. R	785
ıue, Geodetic Station	U. S. Lake Survey	997
Geodetic Station	U. S. Lake Survey	626
Junction	L. S. & M. S. R. R	579
ıe, water-tank	C. & M. L. S. R. R	587
h	G. R. & Ind. R. R	828
nery	Ft. W., J. & S. R. R	1,035
'ark	L., S. & M. S. R. R	842
	G., R. & Ind. R. R	887
	C. & G. T. R. R	890
le	Ft. W., J. & S. R. R	1,015
Clemens	C. D. & C. G. T. J. R. R	602
ke, Geodetic Station	U. S. Lake Survey	1,005
	D., G. H. & M. R. R	657
on, water-tank	C. & M. L. S. R. R	594
n	L. S. & M. S. R. R	964
le	G. R. V. R. R	807
ee	M., H. & O. R. R	1,379
ffalo	Mich. Cent. R. R	602
ven	C., D. & C. G. T. J. R. R	617
t	L. S. & M. S. R. R	584
	Mich. Cent. R. R	681
nction	Mich. A. L. R. R	697
	D. & B. C. R. R	631
npton Mine	M., H. & O. R. R	1,675
oncord	Mich. Cent. R. R	968
ansing	D., L. & N. R. R	852
a	G. R. & Ind. R. R	852
	L. S. & M. S. R. R	942
	C. & M. L. S. R. R	631
	C. & G. T. R. R	874
	P. H. & N. W. R. R	730
v	J., L. & S. R. R	1,088
	D., L. & N. R. R	874
ga	G. R. V. R. R	895
gon Junction	M., H. & O. R. R	1,434
	D. & B. C. R. R	995
	G., R. & Ind. R. R	1,072
	L. S. & M. S. R. R	1,126
	Mich. Cent. R. R	962
	L. S. & M. S. R. R	710
Lake	L. S. & M. S. R. R	683
rn	C. & G. T. R. R	774
ake	D. & B. C. R. R	869
	D., G. H. & M. R. R	735
	D., G. H. & M. R. R	745
	D. & B. C. R. R	1,058
Furnace	M., H. & O. R. R	622
	D., L. & N. R. R	868
a	L. S. & M. S. R. R	707
	G. R. & Ind R. R	927
	Mich. Cent. R. R	986
ee	G. R. V. R. R	713
ter, turn-table	C. & M. L. S. R. R	595
	G. R. & Ind. R. R	872
	C. & G. T. R. R	892

Station.	Authority.	Elevation.
		Feet.
Petersburgh	L. S. & M. S. R. R	670
Petoskey	G. R. & Ind. R. R	658
Pewamo	D., G., H. & M. R. R	744
Pierson	G R. & Ind. R. R	906
Pinconning	J., L. & S. R. R	599
Pine Grove	K. & S. H. R. R	777
Pine Lake	C. & G. T. R. R	859
Pioneer Furnace	M., H. & O. R. R	1,382
Pittsburgh Lake, Angeline Mine	M., H. & O. R. R	1,442
Pittsford	L. S. & M. S. R. R	1,109
Do. Geodetic Station	U. S. Lake Survey	1,149
Plainwell	L. S. & M. S. R. R	744
Plymouth	D., L. & N. R. R	747
Pokagon	Mich. Cent. R. R	733
Pontiac	D., G., H. & M. R. R	934
Do. Stanley Station crossing, O. & Pt. A. R. R	C. & G. T. R. R	897
Porcupine Mountain, Geodetic Station	U. S. Lake Survey	2,023
Portage	L. S. & M. S. R. R	860
Portage Lake	G. R. & Ind. R. R	834
Porter, Geodetic Station	U. S. Lake Survey	950
Port Huron, Signal Station	U. S. Signal Office	633
Portland	D., L. & N. R. R	730
Pulaski	Mich. A. L. R. R	1,043
Quimby	G. R. V. R. R	794
Quincy	L. S. & M. S. R. R	1,027
Do. Geodetic Station	U. S. Lake Survey	1,061
Rack's Mills	C. D. &C. G. T. R. R	759
Raisin	A. & D. R. R	862
Do. Geodetic Station	U. S. Lake Survey	851
Reading	Ft. W., J. & S. R. R	1,200
Do. Geodetic Station	U. S. Lake Survey	1,209
Redford	D. L. & N. R. R	631
Reed City	G. R. & Ind. R. R	1,027
Reese	D. & B. C. R. R	629
Remick	D. L. & N. R. R	934
Republic	M. H. & O. R. R	1,510
Republic Mine	M. H. & O. R. R	1,536
Riga	L. S. & M. S. R. R	692
Rives' Junction	G. R. V. R. R	904
Rochester	D. & B. C. R. R	747
Rockford	G. R. & Ind. R. R	689
Rockwood	L. S. & M. S. R. R	582
Rodney	D. L. & N. R. R	1,062
Rolling Mill Mine	M. H. & O. R. R	1,402
Roscommon	J., L. & S. R. R	1,128
Ross	G. R. & Ind. R. R	777
Royal Oak	D., G. H. & M. R. R	663
Saganin	J., L. & S. R. R	616
Saginaw	M., H. & O. R. R	1,441
Saginaw City	J., L. & S. R. R	591
Saginaw Mine	M., H. & O. R. R	1,552
Saint Charles	J., L. & S. R. R	591
Saint Helens	J., L. & S. R. R	1,158
Saint John's	D., G. H. & M. R. R	767
Do. (L. W. of Maumee River)	Ft. W., J. & S. R. R	996
Do. Bridge	C. & M. L. S. R. R	596
Salem	D. L. & N. R. R	953
Saline	A. & D. R. R	889
Sanborn, grade	C. & G. T. R. R	710
Sand Lake	G. R. & Ind. R. R	912
Sand River	D. M. & M. R. R	627
Saranac	D., G. H. & M. R. R	643
Schoolcraft	L. S. & M. S. R. R	884

Station.	Authority.	Elevation.
		Feet.
Scio	Mich. Cent. R. R	845
Shaftsburg	C. & G. T. R. R	879
Shelby Depot	C. & M. L. S. R. R	808
Shelbyville	G. R. & Ind. R. R	832
Shelter Bay, Geodetic Station	U. S. Lake Survey	1,054
Shenango Mine	M. H. & O. R. R	1,421
Shepardsville	D., G. H. & M. R. R	749
Sheridan	D., L. & N. R. R	856
Do	G. R. V. R. R	806
Sherman, Geodetic Station	U. S. Lake Survey	1,038
Sherwood	Mich. A. L. R. R	872
Shiloh	D., L. & N. R. R	848
Simons	G. R. & Ind. R. R	1,219
Snyder	Mich. A. L. R. R	971
South Boardman	G. R. & Ind. R. R	1,005
South Haven	K. & S. H. R. R	583
South Lansing	L. S. & M. S. R. R	807
South Lyon	D., L. N. R. R	933
Spinnings	D. & B. C. R. R	621
Spring Arbor	Mich. A. L. R.R	994
Spring Lake	D., G. H. & M. R. R	596
Springport	L. S. & M. S. R. R	986
Spurr Mine	M. H. & O. R. R	1,607
Spurr Mountain	M. H. & O. R. R	1,602
Standard Mine	M. H. & O. R. R	1,538
Standish	J., L. & S. R, R	627
Stanton	D., L. & N. R. R	904
Stanton Junction	D., L. & N. R. R	821
Stanwood	G. R. & Ind. R. R	954
State Road	J., L. & S. R. R	602
Stimpson's	A. & D. R. R	865
Sterling	M. H. & O. R. R	1,567
Steward Mine	M. H. & O. R. R	1,602
Sturgeon	M. H. & O. R. R	1,643
Sturgeon River, Geodetic Station	U. S. Lake Survey	947
Sturgis	L. S. & M. S. R. R	934
Suffield	C. & G. T. R. R	783
Superior, Lake	U. S. Lake Survey	602
Swartz Creek	C. & G. T. R. R	782
Taylor	M., H. & O. R. R	1,225
Taylor Mine	M., H. & O. R. R	1,516
Tecumseh	L. S. & M. S. R. R	807
Tekonsha	Mich. A. L. R. R	937
Terry's	J., L. & S. R. R	589
Thomas	D. & B. C. R. R	1,093
Three Lakes	M., H. & O. R. R	1,616
Three Oaks	Mich. Cent. R. R	669
Three Rivers	L. S. & M. S. R. R	805
Travis	G. R. & Ind. R. R	742
Trenton	L. S. & M. S. R. R	584
Tribola, Geodetic Station	U. S. Lake Survey	1,237
Trowbridge	C. & G. T. R. R	851
Trufant's	D., L. & N. R. R	884
Tustin	G. R. & Ind. R. R	1,212
Union City	Mich. A. L. R. R	900
Upper Big Rapids	G. R. & Ind. R. R	927
Utica	D. & B. C. R. R	650
Vandalia	Mich. A. L. R. R	878
Vassar	D. & B. C. R. R	643
Vermontville	G. R. V. R. R	817
Vernon	D., G. H. & M. R. R	770
Vicksburg	G. R. & Ind. R. R	852
Vulcan, Geodetic Station	U. S. Lake Survey	1,328
Wagar's	D., L. & N. R. R	856

Station.	Authority.	Elevation.
		Feet.
Walton Junction	G. R. & Ind. R. R	1,047
Warren	D. & B. C. R. R	641
Wasepi	G. R. & Ind. R. R	842
Do. (near G. R. & I. R. R. Crossing)	Mich. A. L. R. R	835
Waterford	D., G. H. & M. R. R	988
Wayland	G. R. & Ind. R. R	747
Wayne Junction	Mich. Cent. R. R	662
Webberville	D., L. & N. R. R	892
Wells	J., L. & S. R. R	774
Wellesville	L. S. & M. S. R. R	690
Wenona	J., L. & S. R. R	589
West Branch	J., L. & S. R. R	957
Westwood	G. R. & Ind. R. R	1,089
Wheal Kate, Geodetic Station	U. S. Lake Survey	1,508
Wheatland, Geodetic Station	U. S. Lake Survey	1,248
Wheatland Centre	D., L. & N. R. R	1,004
White Feather	J., L. & S. R. R	604
White Oaks	Mich. Cent. R. R	842
White Pigeon	L. S. & M. S. R. R	824
Whites	Mich. Cent. R. R	900
Wibber Summit	D., L. & N. R. R	781
Williamston	D., L. & N. R. R	891
Winthrop Mine	M., H & O. R. R	1,456
Wood Lake	G. R. & Ind. R. R	891
Wood's Corners	D., L. & N. R. R	851
Wood's Mill	D., L. & N. R. R	926
Woodstock, Geodetic Station	U. S. Lake Survey	1,191
Wyandotte	L. S. & M. S. R. R	580
Wyman	D., L. & N. R. R	960
Ypsilanti	Mich. Cent. R. R	714

Station.	Authority.	Elevation.
		Feet.
.....	St. P. & S. C. R. R.	1,538
.....	Toner	950
.....	N. P. R. R	1,204
.....	C., M. & St. P. R. R	1,629
water	U. S. Engineer Corps	1,190
.....	St. P. & P. R. R	1,187
ea	C., M. & St. P. R. R	1,221
.....	C., M. & St. P. R. R	1,261
.....	U. P. R. R	1,328
ria	St. P. & P. R. R	1,382
ater	U. S. Engineer Corps	657
.....	C. & N. W. R. R	1,283
water	U. S. Engineer Corps	827
.....	St. P. & P. R. R	878
n	C., M. & St. P. R. R	1,007
ng	C., M. & St. P. R. R	1,270
ek	St. P. & S. C. R. R	1,396
.....	C., M. & St. P. R. R	861
n	N. P. R. R	1,310
.....	C., M. & St. P. R. R	1,253
.....	C., M. & St. P. R. R	1,197
Junction	C., M. & St. P. R. R	1,194
.....	St. P. & P. R. R	918
.....	St. P. & S. C. R. R	1,533
.....	St. P. & P. R. R	1,116
.....	C. & N. W. R. R	1,528
ke	C. & N. W. R. R	930
.....	Toner	1,600
Bay	Smithsonian Inst	1,270
.....	St. P. & P. R. R	972
ain, water	U. S. Engineer Corps	695
ain	St. P. & S. C. R. R	725
airie	St. P. & P. R. R	1,134
e	St. P. & P. R. R	1,084
ie	St. P. & P. R. R	903
.....	St. P. & P. R. R	1,042
.....	St. P. & S. C. R. R	1,631
e	St. P. & P. R. R	930
ie Lake	U. S. Engineer Corps	978
.....	M. & St. P. R. R	963
.....	Nicollet	966
n Lake	St. P. & S. C. R. R	1,420
and	C., M. & St. P. R. R	1,089
y	St. P. & S. C. R. R	728
g Prairie	C., M. & St. P. R. R	1,286
igton	St. P. & S. C. R. R	738
ding	St. P. & S. C. R. R	1,425
ancs	Toner	1,238
d, water	U. S. Engineer Corps	1,152
d	N. P. R. R	1,207
ridge	St. P. & P. R. R	957
....., Signal Station	U. S. Signal Office	968
ood	St. P. & S. C. R. R	749
dale	C., M. & St. P. R. R	1,271
on	C., M. & St. P. R. R	1,024
an	Toner	600
ton, Geodetic Station	U. S. Lake Survey	744
.....	C., M. & St. P. R. R	947

Station.	Authority.	Elevat
Butterfield	St., P. & S. C. R. R	1
Byron	C. & N. W. R. R	1
Campbell	St. P. & P. R. R	
Canby	C. & N. W. R. R	1
Carver	C., M. & St. P. R. R	
Do	M. & St. L. R. R	
Cass Lake, water	U. S. Engineer Corps	1
Castle Rock	C. M. & St. P. R. R	
Centreville	L., S. & M. R. R. R	
Chaska	C., M. & St. P. R. R	
Do. crossing of M. & St. L. R. R	C., M. & St. P. R. R	
Chatfield	C. & N. W. R. R	
Chatfield Junction	C. & N. W. R. R	1
Chester	C. & N. W. R. R	1
Christina	St. P. & P. R. R	1
Claremont	C. & N. W. R. R	1
Clear Lake	St. P. & P. R. R	
Clear Water, water	U. S. Engineer Corps	
Clinton Falls	C., M. & St. P. R. R	1
Cockato	St. P. & P. R. R	1
Courtland	C. & N. W. R. R	
Do .. bridge	C. & N. W. R. R	
Do ...high water	C. & N. W. R. R	
Crookston		
Crow Wing	St. P. & P. R. R	1
Do.....water	U. S. Engineer Corps	1
Crystal, Lake	St. P. & S. C. R. R	
Dahlgren	C., M. & St. P. R. R	
Darwin	St. P. & P. R. R	1
Davis, Camp	Pacific R. R. Reports	
Dayton Bluff	C., M. & St. P. R. R	
De Forest	C., M. & St. P. R. R	1
De Graff	St. P. & P. R. R	1
Delano	St. P. & P. R. R	
Delevan	C., M. & St. P. R. R	1
Detroit City	N. P. R. R	1
Dexter	C., M. & St. P. R. R	1
Dodge Centre	C. & N. W. R. R	1
Doran	St. P. & P. R. R	
Doty	C. & N. W. R. R	1
Douglas	St., & P. R. R	1
Dover	C. & N. W. R. R	1
Drake	St. P. & S. C. R, R	1
Dresbach	C. M. & St. P. R. R	
Duluth	N. P. R. R	
Do..Lake Superior	N. P. R. R	
Do..Signal Station	U. S. Signal Office	
Dundas	C., M. & St. P. R. R	
Dundee	St. P. & S. C. R. R	1
Eagle Creek bridge	St. P. & S. C. R. R	
Eagle Lake	C. & N. W. R. R	1
East Henderson, water	U. S. Engineer Corps	
East Henderson	St. P. & S. C. R. R	
East Minneapolis	M. & St. L. R. R	
East Okabena Lake, water	St. P. & S. C. R. R	1
Easton	C., M. & St. P. R. R	1
East Richmond	C., M. & St. P. R. R	
East Saint Cloud	St. P. & P. R. R	1
East Saint Peter	St. P. & S. C. R. R	
East Sawteeth, Geodetic Station	U. S. Lake Survey	1
Eckelson, Lake	R. R. Reports	1
Eden Prairie	M. & St. L. R. R	
Edgerton	C., M. & St. P. R. R	1
Elgin	C. & N. W. R. R	1

Station.	Authority.	Elevation.
		Feet.
.....	P. R. R. Reports	1,298
.....	St. P. & P. R. R	903
..., water	U. S. Engineer Corps	850
.....	Toner	1,600
.....	C., M. & St. P. R. R	889
e	St. P. & P. R. R	1,345
.....	C. & N. W. R. R	1,237
.....	C., M. & St. P. R. R	943
t	C., M. & St. P. R. R	1,176
.....	C., M. & St. P. R. R	1,002
on, crossing H. & D. R. R	C., M. & St. P. R. R	901
....Depot	C., M. & St. P. R. R	904
....crossing Iowa and Minnesota	C., M. & St. P. R. R	904
ı		
ater	U. S. Engineer Corps	699
ı, Big Sioux River	St. P. & S. C. R. R	1,501
ac	N. P. R. R	608
ke	L. S. & M. R. R. R	906
lls	C. & N. W. R. R	1,023
.....	Minn. Mid. R. R	970
.....	C., M. & St. P. R. R	1,302
ty	N. P. R. R	1,411
.....	C., M. & St. P. R. R	721
.....	C., M. & St. P. R. R	1,508
.....	St. P. & P. R. R	709
.....	Minn. Mid. R. R	821
.....	Minn. Mid. R. R	717
.....	C., M. & St. P. R. R	1,007
.....	B. C. R. & R. R. R	1,223
.....	N. P. R. R	925
nder	C., M. & St. P. R. R	974
ke	L., S. & M. R. R. R	888
.....	St. P. & P. R. R	1,017
adow	C., M. & St. P. R. R	1,338
w	C. & N. W. R. R	1,173
alls	C., M. & St. P. R. R	941
.....	St. P. & S. C. R. R	714
l	Minn. Mid. R. R	805
.....	St. P. & P. R. R	1,150
.....	M. & St. L. R. R	1,240
.....	C., M. & St. P. R. R	709
. W	U. S. Engineer Corps	664
unction	C., M. & St. P. R. R	709
.....	C., M. & St. P. R. R	1,662
.....	C., M. & St. P. R. R	1,222
.....	N. P. R. R	1,152
.....	C., M. & St. P. R. R	1,248
.....	C., M. & St. P. R. R	1,081
.....	M. & St. L. R. R	886
ı, water	U. S. Engineer Corps	709
ke	P. R. R. Reports	1,284
.....	St. P. & P. R. R	1,063
ke, depot	St. P. & S. C R. R	1,417
....water	St. P. & S. C. R. R	1,403
rewster)	St. P. & S. C. R. R	1,485
.....	L., S. & M. R. R. R	1,025
.....	N. P. R. R	1,386
.....	C., M. & St. P. R. R	649
.....	C., M. & St. P. R. R	663
.....	M. & St. L. R. R	919
.....	Toner	1,438
.....	C., M. & St. P. R. R	679
.....	M. & St. L. R. R	1,247
ı	Toner	1,050

Station.	Authority.	Elevation
		Feet.
Iceland	St. P. & S. C. R. R	99[illegible]
Ida	St. P. & P. R. R	1,40[illegible]
Iona	C., M. & St. P. R. R	1,60[illegible]
Iosco	M. & St. L. R. R	1,14[illegible]
Isinours	C., M. & St. P. R. R	89[illegible]
Island Lake	N. P. R. R	1,30[illegible]
Itasca	St. P. & P. R. R	8[illegible]
Janesville	C. & N. W. R. R	1,0[illegible]
Janett	Minn. Mid. R. R	7[illegible]
Jessie Lake	P. R. R. Reports	1,2[illegible]
Jordan	M. & St. L. R. R	7[illegible]
Judson, water	U. S. Engineer Corps	7[illegible]
Junction	St. P. & S. C. R. R	1,6[illegible]
Kalikomeja Lake		1,[illegible]
Kandiyohi	St. P. & P. R. R	1,[illegible]
Kasota	C. & N. W. R. R	[illegible]
Do. Junction	St. P. & S. C. R. R	[illegible]
Do. Minnesota River Bridge	C. & N. W. R. R	[illegible]
Do. Minnesota River, low water	C. & N. W. R. R	[illegible]
Do. Minnesota River, high water	C. & N. W. R. R	735
Kasson	C. & N. W. R. R	1,[illegible]252
Keegan	Minn. Mid. R. R	759
Keegan's Lake, grade	C., M. & St. P. R. R	948
Kellogg	C., M. & St. P. R. R	702
Kettle River depot	L. S. & M. R. R. R	1[illegible],114
Kilkenny	M. & St. L. R. R	1[illegible],056
Kimberley	N. P. R. R	1[illegible],233
Kirkhoven	St. P. & P. R. R	[illegible],104
Kittson	St. P. & P. R. R	856
Lac qui Parle	U. S. Engineer Corps	940
La Crescent	C., M. & St. P. R. R	647
Do.....high-water mark	C., M. & St. P. R. R	648
Do.....lime-kiln	C., M. & St. P. R. R	650
Lake Benton	C. & N. W. R. R	[illegible],759
Lake City	C., M. & St. P. R. R	705
Do...water	U. S. Engineer Corps	658
Lake Crystal	St. P. & S. C. R. R	987
Lakefield	C., M. & St. P. R. R	1,463
Lake Side	N. P. R. R	1,335
Lake Traverse, water	M. & St. P. R. R	970
Lamberton	C. & N. W. R. R	1,144
La Moille	C., M. & St. P. R. R	660
Lanesboro	C., M. & St. P. R. R	841
Langdon	C., M. & St. P. R. R	813
Langola	St. P. & P. R. R	1,063
Lansing	St. P. & P. R. R	1,224
Lapham	Smithsonian	850
Leech Lake	U. S. Engineer Corps	1,292
Lena	C. & N. W. R. R	1,073
Lester Riv. Geodetic Station	U. S. Lake Survey	1,157
Le Sueur	St. P. & S. C. R. R	753
Do..water	U. S. Engineer Corps	715
Do..high water in Minnesota River	St. P. & S. C. R. R	735
Lewiston	C. & N. W. R. R	1,211
Lincoln	St. P. & S. C. R. R	1,042
Litchfield	St. P. & P. R. R	1,125
Little Falls	St. P. & P. R. R	1,118
Long Lake Station	St. P. & P. R. R	949
Lower Bass Lake	St. P., S. & T. F. R. R	893
Luzerne	St. P. & S. C. R. R	1,451
Lyle	C., M. & St. P. R. R	1,199
McCracken	Minn. Mid. R. R	739
Madison	C., M. & St. P. R. R	1,250
Manchester	M. & St. L. R. R	1,258

Station.	Authority.	Elevation.
		Feet.
Mankato	C., M. & St. P. R. R	770
Do..water	U. S. Engineer Corps	751
Manomin	St. P. & P. R. R	842
Mapleton	C., M. & St. P. R. R	1,031
Marion	Toner	1,200
Marshall	C. & N. W. R. R	1,174
Mazeppa	Minn. Mid. R. R	935
Medalia	St. P. & S. C. R. R	1,021
Medford	C., M. & P. R. R	1,098
Melrose	St. P. & P. R. R	1,189
Mendota	St. P. & S. C. R. R	718
Do..St. Paul Junction	C., M. & St. P. R. R	759
Meriden	C. & N. W. R. R	1,149
Merriam Junction, St. P. & S. C. R. R	M. & St. L. R. R	753
Midland Junction	Minn. Mid. R. R	695
Milan	C., M. & St. P. R. R	995
Millville	Minn. Mid. R. R	787
Minneapolis	M. & St. L. R. R	825
Do.....Miss. Riv	U. S. Engineer Corps	794
Minneiska L. W	U. S. Engineer Corps	644
Minneopa	St. P. & S. C. R. R	871
Do..bridge, 68 feet above water	St. P. & S. C. R. R	863
Minneota	C. & N. W. R. R	1,179
Minnesota City	C., M. & St. P. R. R	677
Minnesota Falls	C., M. & St. P. R. R	1,041
Do.....(foot of)	U. S. Engineer Corps	869
Minnesota Lake	Do	1,038
Minnetonka Lake	St. P. & P. R. R	922
Money Creek	C., M. & St. P. R. R	692
Montgomery	M. & St. L. R. R	1,063
Monticello, water	U. S. Engineer Corps	890
Montevideo	C., M. & St. P. R. R	927
Moorhead, Signal Station	U. S. Signal Office	923
Do...East bank Red River	N. P. R. R	906
Moose Lake, depot	L., S. & M. R. R. R	1,054
Morris	St. P. & P. R. R	1,122
Motley	N. P. R. R	1,222
Mound Prairie	C., M. & St. P. R. R	660
Mountain Lake	St. P. & S. C. R. R	1,300
Mulford's Siding	M. & St. L. R. R	1,060
Muskoda	N. P. R. R	1,085
Newport	C., M. & St. P. R. R	751
Do..L. W	U. S. Engineer Corps	672
New Prague	M. & St. L. R. R	973
New Richland	M. & St. L. R. R	1,178
New Ulm	C. & N. W. R. R	837
Do..high water in Minnesota River	C. & N. W. R. R	808
Nicollet	C. & N. W. R. R	980
Nicols	St. P. & S. C. R. R	706
Nininger, water	U. S. Engineer Corps	665
Norman	N. P. R. R	1,287
North Branch	L. S., M. R. R. R	885
Northfield	C., M. & St. P. R. R	915
Oakdale	St. P., S. & T. F. R. R	879
Oakes	St. P. & P. R. R	1,228
Oak Lake	N. P. R. R	1,369
Oakland	C., M. & St. P. R. R	1,265
Odessa	C., M. & St. P. R. R	963
Okabena	C., M. & St. P. R. R	1,410
Olivia	C., M. & St. P. R. R	1,082
Olmstead	C. & N. W. R. R	1,054
Oronoco	C. & N. W. R. R	1,041
Ortonville	C., M. & St. P. R. R	990

Station.	Authority.	Elevati
		F
Osakis	St. P. & P. R. R	1,
Oshawa	C. & N. W. R. R	
Ottawa	St. P. & S. C. R. R	
Do. water	U. S. Engineer Corps	
Owatonna	C. & N. W. R. R	1,
Do...crossing, C. & N. W. R. R	C., M. & St. P. R. R	1,
Pembina	Toner	
Pemidgi Lake	Toner	1,
Perham	N. P. R. R	1,
Peterson	C., M. & St. P. R. R	
Pierre, Fort	Pacific R. R. Reports	
Pike Lake	Pacific R. R. Reports	1,
Pillager	N. P. R. R	1,
Pine City	L., S. & M. R. R. R	
Pine Island	C. & N. W. R. R	
Pipestone City	St. P. & S. C. R. R	1,
Do	C., M. & St. P. R. R	1,
Plainview	C. & N. W. R. R	1,
Do...Junction	C. & N. W. R. R	1,
Pomme de Terre	St. P. & P. R. R	1,
Do.....Creek (mouth)	U. S. Engineer Corps	
Poplar Lake	P. R. R. Reports	1,
Posts	C. & N. W. R. R	
Prior Lake, Station	C., M. & St. P. R. R	
Do ....water	C., M. & St. P. R. R	
Qui Parle, Lake	Petermann	
Rainy Lake	Hind	1,
Ramsey, cross. S. Minn. R. R. & St. P. R. R.	C., M. & St. P. R. R	1,
Randall	St. P. & P. R. R	1,
Rapidan	C., M. & St. P. R. R	
Read's Landing	C., M. & St. P. R. R	
Do.....L. W	U. S. Engineer Corps	
Red Wing	C., M. & St. P. R. R	
Do...L. W	U. S. Engineer Corps	
Redwood Falls	C. & N. W. R. R	1,
Reinville Trading Post		
Renville	C., M. & St. P. R. R	1,
Richmond	C., M. & St. P. R. R	
Ridgeley, Fort, water	U. S. Engineer Corps	
Ripley, Fort	St. P. & P. R. R	1,
Rochester	C. & N. W. R. R	
Rolette	St. P. & P. R. R	
Rosemount	C., M. & St. P. R. R	
Rush City	L., S. & M. R. R. R	
Rushford	C., M. & St. P. R. R	
Rushmore	St. P. & S. C. R. R	1,
Sacred Heart	C., M. & St. P. R. R	1,
St. Anthony's Falls	Smithsonian Inst	
Do.....Junction	St. P. & P. R. R	
Do.....low water, Mississippi River	St. P. & P. R. R	
St. Augusta, water	U. S. Engineer Corps	
St. Charles	C. & N. W. R. R	1,
St. Cloud, east shore Mississippi River	St. P. & P. R. R	1,
Do... west shore Mississippi River	St. P. & P. R. R	1,
Do... low water, Mississippi River	St. P. & P. R. R	
St. Cloud Mill, Mississippi River	U. S. Engineer Corps	
Do.....low water, Mississippi River	St. P. & P. R. R	
St. Croix Lake, draw-bridge	C. & N. W. R. R	
Do..... low water		
St. James	St. P. & S. C. R. R	1,
St. Johns	St. P. & P. R. R	1,
St. Joseph	St. P. & P. R. R	1,
St. Oloff	St. P. & P. R. R	1,

Station.	Authority.	Elevation.
		Feet.
St. Paul, extreme low water in Mississippi River, 1864.	U. S. Engineer Corps	683
Do..ordinary low water	Mean result from R. R. levels	685
Do..high water, 1850	U. S. Engineer Corps	702
Do..Union Depot (old level)	Mean result from R. R. levels	688
Do..Union Depot (new level)	Mean result from R. R. levels	702
Do..Signal Station	U. S. Signal Office	811
St. Peter	C. & N. W. R. R	812
Do..water	U. S. Engineer Corps	729
St. Vincent, bank Red River	St. P. & P. R. R	792
Do.....high water, 1866	St. P. & P. R. R	787
Do.....usual water surface	St. P. & P. R. R	758
Do.....Signal Station	U. S. Signal Office	804
Sakatah Lake	Toner	932
Sandy	C. & N. W. R. R	1,089
Do. Lake	Toner	1,450
Sauk Center	St. P. & P. R. R	1,232
Sauk Rapids	St. P. & P. R. R	1,008
Shakopee, crossing of St. P. & S. C. R. R.	C., M. & St. P. R. R	756
Do....low water, Minnesota River	C., M. & St. P. R. R	692
Do....high water, Minnesota River	C., M. & St. P. R. R	719
Sherburne	C., M. & St. P. R. R	1,273
Shetek Lake	Petermann	1,518
Sicottes	N. P. R. R	1,282
Sleepy Eye	C. & N. W. R. R	1,034
Do....Lake Station	C. & N. W. R. R	1,020
Smith Lake	S., P. & P. R. R	1,049
Snelling, Fort	Med. Dep., U. S. A	820
South Bend	St. P. & S. C. R. R	808
Do....water	U. S. Engineer Corps	755
Spirit Lake	Toner	1,310
Split Rock, Geodetic Station	U. S. Lake Survey	765
Springfield	C. & N. W. R. R	1,025
Spring Valley	C., M. & St. P. R. R	1,266
Stanley	St. P. & P. R. R	902
Stewart	C., M. & St. P. R. R	1,064
Stillwater	St. P., S. & T. F. R. R	680
Do...low water in Saint Croix Lake	St. P., S. & T. F. R. R	660
Stillwater Junction	C. & N. W. R. R	876
Stockton	C. & N. W. R. R	753
Sueur Lake	Petermann	1,011
Sumter	C., M. & St. P. R. R	1,035
Superior, Lake	U. S. Engineer Corps	602
Swede Grove	St. P. & P. R. R	1,186
Takara Lake		1,168
Theilman	Minn. Mid. R. R	743
Thompson	N. P. R. R	1,038
Tiger Lake	R. R. reports	979
Do....water	C., M. & St. P. R. R	979
Tintah	St. P. & P. R. R	991
Tracey	C. & N. W. R. R	1,403
Do	Minn. Mid. R. R	756
Traverse Lake, water	U. S. Engineer Corps	950
Tumuli	St. P. & P. R. R	1,196
Twin Lakes	M. & St. L. R. R	1,255
Twin Rivers, water	St. P. & P. R. R	1,117
Tyler	C. & N. W. R. R	1,750
Upper Bass Lake	St. P., S. & T. F. R. R	926
Utica	C. & N. W. R. R	1,170
Victoria	St. P. & P. R. R	1,366
Viola	C. & N. W. R. R	1,129
Wabasha	C., M. & St. P. R. R	712
Do..water	U. S. Engineer Corps	656

Station.	Authority.	Elevation.
		Feet.
conta, low water	U. S. Engineer Corps	659
dena	N. P. R. R	1,351
lnut Grove	C. & N. W. R. R	1,223
seca	C. & N. W. R. R	1,153
tab	St. P. & P. R. R	1,057
Do. Mississippi River	U. S. Engineer Corps	1,001
terville	M. & St. L. R. R	1,008
tson	C., M. & St. P. R. R	1,029
verly	St. P. & P. R. R	1,007
yzota	St. P. & P. R. R	931
aver	C., M. & St. P. R. R	674
lls	C., M. & St. P. R. R	1,153
stcott	C., M. & St. P. R. R	882
st Saint Cloud	St. P. & P. R. R	1,025
st Sawteeth, Geodetic Station	U. S. Lake Survey	1,532
st Union	St. P. & P. R. R	1,323
alan	C., M. & St. P. R. R	786
ite Bear	M. & St. L. R. R	919
ite Bear Lake Junction	L. S. & M. R. R. R.	928
ite Earth	Toner	1,670
lder	St. P. & S. C. R. R	1,448
ld Rice	St. P. & P. R. R	905
llmar	St. P. & P. R. R	1,124
ndom	St. P. & S. C. R. R	1,353
nnebago City	C., M. & St. P. R. R	1,096
nnibigoshish Lake	U. S. Engineer Corps	1,290
nona	C., M. & St. P. R. R	662
Do. low water	U. S. Engineer Corps	634
n's Station	St. P., S. & T. F. R. R	916
thington	N. P. R. R	1,272
ods, Lake of the	Hinds	978
odstock	St. P. & S. C. R. R	1,822
rthington	St. P. & S. C. R. R	1,582
rkoff	C., M. & St. P. R. R	1,310
oming	L. S. & M. R. R. R	899
ung America	C., M. & St. P. R. R	990
mbro Falls	Minn. Mid. R. R	836
mbrota	Minn. Mid. R. R	980

MISSISSIPPI.

Station.	Authority.	Elevation.
		Feet.
Alcorns	M. & N. W. R. R	85
Artesia	M. & O. R. R	244
Baldwyn	M. & O. R. R	379
Barnett	N. O. & N. E. R. R	306
Bay Saint Louis	N. O., M. & T. R. R	24
Booneville	M. & O. R. R	511
Do....Summit	M. & O. R. R	513
Brooksville	M. & O. R. R	275
Buckatunna	M. & O. R. R	150
Burnsville	Memphis & C. R. R	463
Clarksdale	M. & N. W. R. R	87
Corinne	N. O. & N. E. R. R	276
Corinth	Memphis & C. R. R	434
Crawford	M. & O. R. R	316
Derby	N. O. & N. E. R. R	168
De Soto	M. & O. R. R	210
Eastabutchie	N. O. & N. E. R. R	169
East Pearl River	N. O. & N. E. R. R	48
Egypt	M. & O. R. R	306
Ellisville	N. O. & N. E. R. R	239
Enterprise	M. & O. R. R	248
Errata	N. O. & N. E. R. R	260
Glendale	Memphis & C. R. R	495
Do	M. & N. W. R. R	936
Greenwood, on Yazoo River	V. & N. R. R	154
Do.....high water, Yazoo River	V. & N. R. R	158
Grenada, Miss. Cent. R. R	V. & N. R. R	213
Guntown	M. & O. R. R	386
Hattiesburg	N. O. & N. E. R. R	144
Herdelberg	N. O. & N. E. R. R	315
Highland	N. O. & N. E. R. R	174
Iuka	Memphis & C. R. R	455
Jonestown	M. & N. W. R. R	86
Ladners	N. O. & N. E. R. R	235
Lauderdale	M. & O. R. R	213
Laurel	N. O. & N. E. R. R	239
Lockhart	M. & O. R. R	360
Do...Summit		426
Lyon	M. & N. W. R. R	87
Macon	M. & O. R. R	185
Magnolia	M. & N. W. R. R	93
Mayhew	M. & O. R. R	213
Meridian	M. & O. R. R	336
Mississippi City	N. O., M. & T. R. R	10
Mitchell's	N. O. & N. E. R. R	69
Muldon	M. & O. R. R	304
Narkeeta	M. & O. R. R	183
Ocean Springs	N. O., M. & T. R. R	28
Okahola	N. O. & N. E. R. R	219
Okalona	M. & O. R. R	311
Pachuta	N. O. & N. E. R. R	282
Pass Christian	N. O. M. & T. R. R	10
Piotana	N. O. & N. E. R. R	271
Pontotoc Ridge	V. & N. R. R	516
Poplarville	N. O. & N. E. R. R	313
Prairie	M. & O. R. R	311
Purvis	N. O. & N. E. R. R	360
Quitman	M. & O. R. R	231

Station.	Authority.	Eleva
Rienzi	M. & O. R. R.	
Russells	Ala. G. S. R. R	
Saltillo	M. & O. R. R.	
Scooba	M. & O. R. R.	
Shannon	M. & O. R. R.	
Shubuta	M. & O. R. R.	
Shuqulak	M. & O. R. R.	
Sucarnochee	M. & O. R. R.	
Sulowah	N. O. & N. E. R. R.	
Tibbee	M. & O. R. R.	
Toomsuba	Ala. G. S. R. R.	
Tupelo	M. & O. R. R.	
Tuscanola	N. O. & N. E. R. R.	
Verona	M. & O. R. R.	
Vicksburg & Meridian Junction	N. O. & N. E. R. R	
Vicksburg, Signal Station	U. S. Signal Office	
Vossburg	N. O. & N. E. R. R	
Wahalak	M. & O. R. R.	
Wantubbee	N. O. & N. E. R. R.	
Waynesboro'	M. & O. R. R.	
West Enterprise	N. O. & N. E. R. R.	
West Pascagoula	N. O., M. & T. R. R.	
West Point	M. & O. R. R.	
Winchester	M. & O. R. R.	
Yazoo Pass	M. & N. W. R. R.	

MISSOURI.

Station.	Authority.	Elevation.
		Feet.
ıdria, H. W. Mississippi River, 1851	Mo., Iowa & Neb. R. R	487
›.....L. W. Mississippi River, 1872	Mo., Iowa & Neb. R. R	465
ille	St. L., I. Mt. & S. R. R	353
L. W	U. S. Eng'r. Corps	651
ınia	K. C., St. J. & C. B. R. R	833
olis	St. L., I. Mt. & S. R. R	635
;on	Mo., Kans. & Tex. R. R	868
	Mo., Iowa & Neb. R. R	655
ton	St. L. & S. F. R. R	708
	H. & St. J. R. R	739
ills	St. L., I. Mt. & S. R. R	335
;	Toner	482
a	W., St. L. & P. R. R	906
ta	Smithsonian Inst	780
ı	St. L. & S. F. R. R	1,357
	Mo., Kans. & Tex. R. R	748
ıwa, track station house	W., St. L. & P. R. R	647
	St. L., I. Mt. & S. R. R	417
;y	H. & St. J. R. R	637
rd	K. C., St. J. & C. B. R. R	943
's Station	Toner	512
;t's	Toner	506
ın	Mo., Kans. & Tex. R. R	765
;reek	H. & St. J. R. R	589
ut	St. L., I. Mt. & S. R. R	313
ı	Toner	470
	Toner	515
nd	Toner	317
lle	Toner	531
ly	K. C., St. J. & C. B. R. R	769
›.crossing C., R., I. & P. R. R	K. C., St. J. & C. B. R. R	769
	H. & St. J. R. R	780
w	K. C., St. J. & C. B. R. R	861
eld	C., G. & S. L. R. R	317
gs	St. L. & S. F. R. R	1,360
Point	St. L., I. Mt. & S. R. R	321
rck	St. L., I. Mt. & S. R. R	1,024
well	St. L., I. Mt. & S. R. R	592
›w	K. C., St. J. & C. B. R. R	930
;r	Toner	1,000
t's Mills	Toner	542
Creek	Toner	949
ille	Mo., Kans. & Tex. R. R	607
·ille	Toner	763
on	St. L. & S. F. R. R	941
ng Green	L. & M. R. R. R	881
on	B. & S. R. R	879
enridge	H. & St. J. R. R	926
lin	H. & St. J. R. R	516
field	H. & St. J. R. R	757
line	St. L. & S. F. R. R	1,289
's Mill	L. R., V. & Ark. R. R	285
ıing	B. & S. R.R	760
wick	W., St. L. & P. R. R	644
Creek	St. L. & S. F. R. R	1,359
and	St. L. & S. F. R. R	897
in	H. & St. J. R. R	786

Station.	Authority.	Elevation.
		Feet.
Bunkerhill	St. L. & S. F. R. R	1,434
Burton	Mo., Kans. & Tex. R. R	672
Bushberg	St. L., I. Mt. & S. R. R	411
Cadet	Toner	805
Cahoka	Mo., Iowa. & Neb. R. R	697
Cairo	W., St. L. & P. R. R	860
Calhoun	Mo., Kans. & Tex. R. R	77[illegible]
California	Toner	86[illegible]
Callao	H. & St. J. R. R	812
Camden, Missouri River	W., S. L. & P. R. R	72[illegible]
Cameron Junction	H. & St. J. R. R	1,026
Do crossing C., R. I. & P. grade	H. & St. J. R. R	1,028
Camp Branch	Mo., Kans. & Tex. R. R	903
Cane Ridge	L. R. V. & Ark. R. R	288
Caney Creek	St. L., I. Mt. & S. R. R	339
Cape Girardeau	C. G. & S. L. R. R	338
Carbon	H. & St. J. R. R	867
Carbon Center	R. H. R. R	772
Carrollton	W., St. L. & P. R. R	667
Carthage	St. L. & S. F. R. R	1,269
Cassville	Smithsonian Inst	3,000
Castile Creek	W., St. L. & P. R. R	854
Cedar City, 2d bottom of Missouri River	L. & M. R. R. R	550
Centralia	W., St. L. & P. R. R	879
Centretown	Toner	856
Centreview	Toner	875
Chamois	Toner	531
Charleston	St. L., I. Mt. & S. R. R	326
Chillicothe	H. & St. J. R. R	764
Do H. & St. J. R. R. crossing	W., St. L. & P. R. R	746
Chittenham	Toner	458
Clapper	Mo., Kans. & Tex. R. R	751
Clarence	H. & St. J. R. R	824
Clark City	Mo., Iowa & Neb. R. R	694
Clifton	W., St. L. & P. R. R	722
Clinton	Mo., Kans. & Tex. R. R	807
Colvey	St. L. & S. F. R. R	497
Como	L. R. V. & Ark. R. R	289
Conception	W., St. L. & P. R. R	1,018
Converse	W., St. L. & P. R. R	1,075
Conway	St. L. & S. F. R. R	1,408
Cora	B. & S. R. R	789
Corning	K. C., St. J. & C. B. R. R	876
Cote Ronde	Toner	732
Craig	K. C., St. J. & C. B. R. R	871
Crocker	St. L. & S. F. R. R	1,132
Crooked Creek Valley	St. L., S. & L. R. R. R	881
Cuba	St. L. & S. F. R. R	1,010
Dalton	W., St. L. & P. R. R	637
Dardenne, high water	W., St. L. & P. R. R	438
Darley	Toner	1,627
Dayton	St. L. & S. F. R. R	947
Deem's Branch	Toner	1,205
Deerfield	Mo., Kans. & Tex. R. R	791
De Lassus	St. L., I., Mt. & S. R. R	889
Des Arc	St. L., I., Mt. & S. R. R	547
De Soto	St. L., I., Mt. & S. R. R	497
De Witt	W., St. L. & P. R. R	644
Dexter	St. L., I., Mt. & S. R. R	377
Dillon	St. L. & S. F. R. R	1,193
Dixon	St. L. & S. F. R. R	1,215
Dorchester	St. L. & S. F. R. R	1,305

Station.	Authority.	Elevation.
		Feet.
Doren	Toner	870
Downing	Mo., Iowa & Neb. R. R	869
Dozier	Toner	455
Dry Branch	St. L. & S. F. R. R	835
Dundee	Smithsonian Inst	536
Dutch Town	C. G. & S. L. R. R	329
East Leavenworth depot	K. C., S. J. & C. B. R. R	764
Easton	H. & St. J. R. R	912
Edina	B. & M. R. R. R	738
Elkhorn Prairie	St. L. & S. F. R. R	1,409
Elston	Toner	715
Ely	H. & St. J. R. R	731
Emerson	W., St. L. & P. R. R	866
Estill	Mo., Kans. & Tex. R. R	662
Evansville	Mo., Kans. & Tex. R. R	731
Fairfield		977
Fair Grounds	H. & C. M. R. R	518
Fairview	Toner	977
Farmer's City	Toner	885
Fayette	Mo., Kans. & Tex. R. R	657
Ferguson	W., St. L. & P. R. R	505
Forbes	K. C., St. J. & C. B. R. R	848
Forest City	K. C., St. J. & C. B. R. R	859
Franklin	Mo., Kans. & Tex. R. R	591
Franks	St. L. & S. F. R. R	935
Frazier	W., St. L. & P. R. R	957
Fredericktown	St. L., I. Mt. & S. R. R	721
Fulton	L. & M. R. R. R	843
Gads Hill	St. L., I. Mt. & S. R. R	843
Gallagher		785
Gasconade	Toner	483
Glascow	L. & L. M. R. R. R	630
Glen Allen	St. L., I. Mt. & S. R. R	458
Glendale	Toner	568
Glenwood Junction	W., St. L. & P. R. R	998
Do ... cross St. L., K. C. & N. R. R. at grade.	Mo., Iowa & Neb. R. R	990
Gower	W., St. L. & P. R. R	935
Granby City	St. L. & S. F. R. R	1,027
Grand Prairie	St. L. & S. F. R. R	1,363
Granger	Mo., Iowa & Neb. R. R	759
Gray's Ridge	St. L., I. Mt. & S. R. R	300
Greenfield	Smithsonian Inst	1,800
Greenfield's Landing	Toner	320
Green Prairie	St. L. & S. F. R. R	1,374
Green Ridge	Mo., Kans. & Tex. R. R	903
Green Top	W., St. L. & P. R. R	992
Greenwood	Toner	907
Grey's Creek	Toner	531
Hall	K. C., St. J. & C. B. R. R	803
Halliday	Mo., Kans. & Tex. R. R	772
Halls	H. & St. J. R. R	804
Hamilton	H. & St. J. R. R	987
Hancock	St. L. & S. F. R. R	1,109
Hannibal, crossing H. & St. J. R. R	H. & N. R. R	470
Do...high water Mississippi River, 1851	H. & St. J. R. R	469
Do...low water Mississippi River, 1851	H. & St. J. R. R	447
Do...depot	H. & St. J. R. R	470
Do...junction with H. & St. J., B. & Mo. R. & T. W. & W. R. R	Mo., Kans. & Tex. R. R	469
Harlem	H. & St. J. R. R	735
Do. depot	K. C., St. J. & C. B. R. R	746
Do. semaphore	K. C., St. J. & C. B. R. R	749

Station.	Authority.	Elevation.
		Feet.
Harris	Mo., Kans. & Tex. R. R	853
Hassard	Mo., Kans. & Tex. R. R	742
Hematite		475
Hendrickson	St. L., I. Mt. & S. R. R	373
Hermann	Smithsonian Inst	598
Hermitage	Toner	1,037
Do	St. L. & S. F. R. R	1,045
Hibernia	L. & M. R. R. R	860
Higbee	Mo., Kans. & Tex. R. R	877
Higginsville, Lex. & St. L. R. R	L. & M. R. R. R	647
Hogan	St. L., I. Mt. & S. R. R	892
Holt	H. & St. J. R. R	861
Hopewell Summit	St. L., I. Mt. & S. R. R	985
Hopkins	K. C., St. J. & C. B. R. R	1,048
Howard	R. H. R. R	901
Howland	B. & S. R. R	983
Hunnewell	H. & St. J. R. R	755
Hunterville	W., St. & P. R. R	795
Independence	L. & M. R. R. R	995
Iron Centre	St. L. & S. F. R. R	1,036
Irondale	St. L., I. Mt. & S. R. R	796
Iron Mountain Station	St. L., I, Mt. & S. R. R	1,077
Iron Switch	St. L. & S. F. R. R	1,093
Ironton	St. L., I. Mt. & S. R. R	919
Jacksonville	W., St. L. & P. R. R	861
Jameson	W., St. L. & P. R. R	793
Jefferson Barracks	St. L., I. Mt. & S. R. R	418
Jerome	St. L. & S. F. R. R	693
Joplin	S. C. & J. R. R	1,018
Kansas City, Union Depot	Mean result from R. R. levels	748
Do.....Grand avenue	U. T. Co. R. R	783
Do.....high water, 1844	H. & St. J. R. R	752
Do.....Missouri River, opposite	W., St. L. & P. R. R	746
Do.....high water, south pier of bridge	K. C., St. J. & C. B. R. R	753
Do.....track on bridge	K. C., St. J. & C. B. R. R	768
Kearney	H. & St. J. R. R	827
Keytesville, bottom Chariton	W., St. L. & P. R. R	635
Kidder	H. & St. J. R. R	1,017
Kimmswick	St. L., I. Mt. & S. R. R	415
King's Prairie	St. L. & S. F. R. R	1,442
Kingsville	Toner	924
Kirksville	W., St. L. & P. R. R	975
Do..junction Saint Louis, Kansas City & Northern Railroad	B. & M. R. R. R	975
Kirkwood	Toner	636
Knob Lick	St. L., I. Mt. & S. R. R	926
Knobnoster	Toner	822
Knobview	St. L. & S. F. R. R	1,064
Knox	B. & M. R. R. R	768
Labadie	Toner	486
La Belle	B. & M. R. R. R	741
La Clede	B. & S. R. R	786
Do..crossing B. & S. W., grade at	H. & St. J. R. R	787
La Due	Mo., Kans. & Tex. R. R	745
Laflin	St. L., I. Mt. & S. R. R	287
Lakenan	H. & St. J. R. R	729
Lake Station, side track	K. C., St. J. & C. B. R. R	826
Do.....crossing H. & St. J. R. R	K. C., St. J. & B. R. R	829
Lakeville	C. G. & S. L. R. R	351
La Monte	Toner	878
Lancaster	Mo., Iowa & Neb. R. R	972
Lanson	W., St. L. & P. R. R	1,050
La Plata	W., St. L. & P. R. R	940

Station.	Authority.	Elevation.
		Feet.
.....	W., St. L. & P. R. R.	948
.....	St. L. & S. F. R. R	1,030
.....	St. L. & S. F. R. R	1,269
.....	B. & S. R. R	1,078
.....	H. & St. J. R. R	790
.....	Mo., Kans. & Tex. R. R.	785
irie	L. R. V. & Ark. R, R	311
.....	H. & St. J. R. R.	846
anding	W., St. L. & P. R. R.	735
.....	H. & S. J. R. R.	809
.....	B. & S. R. R	425
er	L. R. V. & Ark. R. R.	290
.....	St. L. & S. F. R. R.	1,370
.....	L. & M. R. R. R.	460
top of bluffs	L. & M. R. R. R.	650
e	W., St. L. & P. R. R.	896
.....	Mo., Iowa & Neb. R. R.	737
.....	W., St. L. & P. R. R.	980
ss. St. L., K. C. & N. R. R., where 22.5 feet higher	H. & St. J. R. R	864
pot	H. & St. J. R. R.	867
.....	Toner	585
.....	Mo., Kans. & Tex. R. R.	772
.....	L. R. V. & Ark. R. R.	297
reek	W., St. L. & P. R. R.	854
ll	Toner	411
lle	St. L. & S. F. R. R.	1,338
.....	St. L., I. Mt. & S. R. R.	570
.....	L. & M. R. R. R.	578
.....	St. L. & S. F. R. R.	1,483
.....	K. C., St. J. & C. B. R. R.	1,037
ammit	W., St. L. & P. R. R.	1,027
Station	B. & M. R. R. R.	524
.....	H. & St. J. R. R.	729
county-seat	Mo., Iowa & Neb. R. R.	749
town	Mo., Iowa & Neb. R. R.	787
.....	B. & S. R. R	885
.....	Toner	435
.....	Toner	419
.....	W., St. L. & P. R. R	798
ok	Toner	1,144
.....	B. & S. R. R.	840
.....	W., S. L. & P. R. R.	970
anding	Toner	508
g	St. L., I. Mt. & S. R. R	443
oint	St. L., I. Mt. & S. R. R	863
.....	C. G. & S. L. R. R.	338
amp	C. G. & S. L. R. R.	326
ity	W., St. L. & P. R. R.	722
.....	W., St. L. & P. R. R.	867
inc. with St. L., K. C. & N. R. R.	Mo., Kans. & Tex. R. R	865
.....	Toner	904
.....	Mo., Kans. & Tex. R. R.	728
ry City	W., St. L. & P. R. R.	831
.....	Mo., Kans. & Tex. R. R.	824
.....	H. & St. J. R. R	473
le	H. & St. J. R. R	921
.....	Toner	522
.....	St. L., I. Mt. & S. R. R.	345
.....	St. L. & S. F. R. R.	500
.....	H. & St. J. R. R.	734
e	St. L., I. Mt. & S. R. R	306

Station.	Authority.	Elevation.
		Feet.
Neosho	St. L. & S. F. R. R	1,021
Nettleton	H. & St. J. R. R	958
Nevada	Mo., Kans. & Tex. R. R	870
New Bourbon	Toner	641
New Cambria	H. & St. J. R. R	821
New Madrid	L. R. V. & Ark. R. R	299
Newport	Toner	482
New Springfield	Toner	1,532
Niangua	St. L. & S. F. R. R	1,428
Nibbard	W., St. L. & P. R. R	1,051
Nishnabotna, side track	K. C., St. J. & C. B. R. R	879
Nodaway, side track	K. C., St. J. & C. B. R. R	830
North Lexington, bank Missouri River	W., St. L. & P. R. R	693
North Mo. Junction	W., St. L. & P. R. R	741
North River	H. & St. J. R. R	479
Nosborne	W., St. L. & P. R. R	707
Oakland	Toner	611
Ogden	Toner	500
Ohio City	Toner	505
Oregon	Toner	1,100
Osage City	Toner	541
Osborne	H. & St. J. R. R	1,036
Otterville	Toner	695
Pacific City	St. L. & S. F. R. R	457
Palmyra Junction	H. & St. J. R. R	649
Paris	Mo., Kans. & Tex. R. R	651
Parkville	K. C., St. J. & C. B. R. R	753
Pattonsburgh	W., St. L. & P. R. R	772
Pendleton (summit)	W., St. L. & P. R. R	915
Pevely	St. L., I. Mt. & S. R. R	441
Phelps	K. C., St. J. & C. B. R. R	895
Pickering	K. C., St. J. & C. B. R. R	1,023
Piedmont	St. L., I. Mt. & S. R. R	503
Pierce City	St. L. & S. F. R. R	1,176
Pilot Grove	Mo., Kans. & Tex. R. R	832
Platte River	W., St. L. & P. R. R	819
Plattsburgh	W., St. L. & P. R. R	948
Pleasant Green	Mo., Kans. & Tex. R. R	775
Plymouth	St. L. & S. F. R. R	1,326
Pollock	B. & S. R. R	943
Poplar Bluff	St. L., I. Mt. & S. R. R	343
Do.....bank Black River	C. G. & S. L. R. R	326
Prairie City		771
Prairie Lick	Mo., Kans. & Tex. R. R	695
Purdin	B. & S. R. R	887
Queen City	W., St. L. & P. R. R	1,004
Reelsville		799
Reeves	Toner	372
Renssalaer	Mo., Kans. & Tex. R. R	733
Rhineland	Smithsonian Inst	800
Rich Hill	R. H. R. R	784
Richland	St. L. & S. F. R. R	1,143
Richmond	W., St. L. & P. R. R	809
Richmond and Lexington Junction	W., St. L. & P. R. R	699
Ritchey	St. L. & S. F. R. R	1,066
Robertson	H. & St. J. R. R	870
Rockville	Mo., Kans. & Tex. R. R	771
Rolla	St. L. & S. F. R. R	1,06[illegible]
Roseberry	W., St. L. & P. R. R	97[illegible]
Rosedale	K. C., Ft. S. & G. R. R	79
Rosehill	Toner	5[illegible]
Rosendale	K. C., St. J. & C. B. R. R	9[illegible]
Round Grove	H. & St. J. R. R	8[illegible]

Station.	Authority.	Elevation.
		Feet.
Rushville	K. C., St. J. & C. B. R. R	798
Russell	Mo., Kans. & Tex. R. R	760
St. Aubert	Toner	527
St. Catherine	H. & St. J. R. R	797
St. Charles, bank Missouri River, opposite	W., St. L. & P. R. R	444
Do R. R. bridge floor	W., St. L. & P. R. R	504
St. Clair	St. L. & S. F. R. R	759
St. Francisville	C. G. & S. L. R. R	333
St. Genevieve	Toner	372
St. James	St. L. & S. F. R. R	1,117
St. Joseph, bank Missouri River	W., St. L. & P. R. R	823
Do bridge crossing	K. C., St. J. & C. B. R. R	826
Do Francis street	K. C., St. J. & C. B. R. R	824
Do L. W. in Missouri River	St. J. & D. C. R. R	792
Do H. W. in Missouri River	St. J. & D. C. R. R	812
Do depot	H. & St. J. R. R	825
Do crossing St. L., R. C. & N. R. R.	H. & St. J. R. R	827
Do cross. K. C., St. J. & C. B. R. R.	H. & St. J. R. R	839
St. Louis, old station	St. L., I. Mt. & S. R. R	418
Do city directrix	Levels of Miss. River Com	413
Do do	U. S. C. & G. S	416
Do Union Depot	City Engineer	431
Do Fourth street	St. L., V. & T. H. R. R	470
Do H. W. 1844	City Engineer	428
Do L. W. Miss. R.	City Engineer	379
Do bed Mississippi River	St. L., V. & T. H. R. R	363
Do bronze plate on W. land pier of great bridge	U. S. C. & G. S	461
Do Signal Station	U. S. Signal Office	568
St. Paul	Toner	428
Salem	St. L., S. & L. R. R. R	1,182
Salina City	L. & M. R. R. R	650
Salisbury Junction	W., St. L. & P. R. R	721
Satan	K. C., St. J. & C. B. R. R	709
Savannah, new station	K. C., St. J. & C. B. R. R	1,100
Do old station	K. C., St. J. & C. B. R. R	1,023
Saxton	H. & St. J. R. R	881
Schell City	Mo., Kans. & Tex. R. R	754
Schockley's Gat	St. L. & S. F. R. R	1,367
Scott's	Toner	622
Sedalia, junction M. P. & St. L. & L. R. R.	Mo., Kans. & Tex. R. R	907
Seneca	St. L. & S. F. R. R	851
Shawnee	K. C., Ft. S. & G. R. R	921
Shelbina	H. & St. J. R. R	779
Sikeston	St. L., I. Mt. & S. R. R	330
Simmon's Mountain	St. L., S. & L. R. R	1,250
Sleeper	St. L. & S. F. R. R	1,209
Smith's Fork	W., St. L. & P. R. R	879
Smithton	Toner	888
South Point	Toner	510
Sprague	R. H. R. R	917
Spring Creek	St. L., S. & L. R. R	1,123
Springfield	St. L. & S. F. R. R	1,352
Stafford	St. L. & S. F. R. R	1,479
Stanberry	W., St. L. & P. R. R	876
Stanton	St. L. & S. F. R. R	867
Stewartsville	H. & St. J. R. R	958
Stockton	Smithsonian Inst	800
Stoutville	St. L. & S. F. R. R	1,166
Stoutsville	Mo., Kans. & Tex. R. R	605
Sturgeon	W., St. L. & P. R. R	847
Sugar Lake	K., C. St. J. & C. B. R. R	794
Sullivan	St. L. & S. F. R. R	967
Sulphur Springs	St. L., I. Mt. & S. R. R	411

Station.	Authority.	Elevation.
		Feet.
Sutton	Toner	470
Sylvania	Toner	339
Syracuse	Toner	944
Talbott	Mo., Kans. & Tex. R. R	620
Taylors	St. L. & S. F. R. R	1,004
Taylorville	Toner	470
Tipton	Toner	944
Tip-top Summit	St. L., I. Mt. & S. R. R	1,200
Tolona	B. & M. R. R. R	697
Tower Grove	Smithsonion Inst	500
Turnback Summit	St. L. & S. F. R. R	1,383
Turney	H. & St. J. R. R	1,048
Tuscumbia	Smithsonian Inst	600
Union	Smithsonian Inst	616
Unionville	B. & S. R. R	1,068
Utica	H. & St. J. R. R	739
Verona	St. L. & S. F. R. R	1,262
Waldron	K. C., St. J. & C. B. R. R	757
Walker's	Mo., Kans. & Tex. R. R	856
Warrenton	W., St. L. & P. R. R	853
Washington	Toner	487
Watson	K. C., St. J. & C. B. R. R	904
Wayland	Mo., Iowa & Neb. R. R	531
Webster		525
Wellsburgh	Toner	778
Weston	K. C., St. J. & C. B. R. R	773
West Plattsburgh, summit	W., St. L. & P. R. R	1,020
West Quincy	H. & St. J. R. R	483
Do.....high-water in Missouri River	H. & St. J. R. R	477
Do.....junction with H. & S. J. R. R	B. & M. R. R. R	489
Wheeling	H. &. St. J. R. R	740
Williamsville	St. L., I. Mt. & S. R. R	401
Windsor	Mo., Kans. & Tex. R. R	875
Windthrop	H. & St. J. R. R	801
Winthrop, junction	K. C., St. J. & C. B. R. R	789
Do....depot	K. C., St. J. & C. B. R. R	789
Do....top of rail C. & A. bridge	K. C., St. J. & C. B. R. R	798
Do....crossing R. I. & P. R. R	K. C., St. J. & C. B. R. R	788
Woodend	St. L. & S. F. R. R	1,113
Woodland	H. & St. J. R. R	679
Yeatman	Toner	485

MONTANA.

Station.	Authority.	Elevation.
		Feet.
.....	N. P. R. R	2,272
.....	N. P. R. R	2,299
Ranch	Hayden	4,396
a	De Lacy	6,337
.....	N. P. R. R	3,057
Peak	N. P. Transcontinental Survey.	7,420
oine, Fort, Signal Station	U. S. Signal Office	2,650
.....	N. P. R. R	4,675
Camp	Ludlow	4,538
k	De Lacy	5,896
's Ranch	De Lacy	5,665
tation	De Lacy	5,437
uth	N. P. R. R	3,787
Creek	N. P. R. R	2,639
head	Hayden	4,464
.....	De Lacy	4,888
l	Pre. R. R. levels	3,845
le	N. P. R. R	4,435
p	N. P. R. R	2,405
.....	N. P. Transcontinental Survey.	2,600
, Fort, Signal Station	U. S. Signal Office	2,674
rn	N. P. R. R	2,688
nber	N. P. R. R	4,070
s	N. P. R. R	3,115
root	.....	2,480
Butte	N. P. Transcontinental Survey.	5,540
ot Agency	.....	3,169
ore, Mount	Hayden	10,134
.....Timber line on	Hayden	9,550
.....	N. P. R. R	3,564
's Ranch	Hayden	4,825
.....	Ludlow	4,873
r City (opposite)	Pre. R. R. levels	4,904
rtown	De Lacy	5,000
ary Pass	P. R. R. Reports	6,030
an	Hayden	4,900
.....	Wheeler	4,839
.....	N. P. R. R	4,752
's Springs	Ludlow	4,957
r's Pass	Ludlow	6,147
...Peak	N. P. Transcontinental Survey.	9,106
....do	Hayden	9,002
.....	N. P. R. R	4,725
t	N. P. R. R	12,187
e's Pass	Pacific R. R. Reports	6,044
ment Jordan	.....	2,990
.....	Ludlow	2,247
Rock	N. P. Transcontinental Survey.	4,947
.....	Pre. R. R. levels	4,262
Fork	N. P. R. R	2,086
.....	N. P. R. R	4,123
pur	N. P. R. R	4,735
utte	N. P. Transcontinental Survey.	5,820
l Peak	N. P. Transcontinental Survey.	10,737
Ranch	De Lacy	4,995
an Defile Pass	N. P. R. R	3,946
, Mount	Hayden	10,351
Peak	N. P. Transcontinental Survey.	11,178

Station.	Authority.	Elevation.
		Feet.
Custer	N. P. R. R	2,725
Deer Lodge	Stewart	4,768
Deer Lodge Pass	N. P. R. R. Surveys	5,808
Delano, Mount	Hayden	10,200
Do.....Timber line on	Hayden	8,784
De Smet	N. P. R. R	3,213
Dixon	N. P. R. R	2,320
Drummond	N. P. R. R	3,943
Eddy	N. P. R. R	2,415
Electric Peak	Hayden	11,155
Do.....Timber line on	Hayden	9,442
Elk Peak	N. P. Transcontinental Survey.	8,606
Ellis, Fort	Hayden	4,935
Do	Ludlow	4,747
Ellis, Mount	N. P. Transcontinental Survey.	8,419
Elliston	N. P. R. R	5,036
Elton	N. P. R. R	4,280
Emigrant Peak	Hayden	11,034
Evaro	N. P. R. R	3,946
Fallon	N. P. R. R	2,206
Fish Creek Station		4,134
Flathead Lake	Pacific R. R. Reports	2,800
Do.. Pass, Bridger range	Hayden	6,769
Forsyth	N. P. R. R	2,512
Gaffney's Station	De Lacy	4,838
Gallatin	N. P. R. R	4,030
Do	Hayden	4,132
Garrison	N. P. R. R	4,295
Glendive	N. P. R. R	2,067
Gordon	N. P. R. R	4,905
Grayling	U. & N. R. R	5,442
Greycliff	N. P. R. R	3,845
Halfway House	Pre. R. R. levels	4,157
Hamilton	Hayden	4,342
Do	N. P. R. R	4,240
Hamilton's, Jeff. Davis Gulch	De Lacy	6,536
Hathaway	N. P. R. R	2,426
Helena	Hayden	4,266
Do	N. P. R. R	3,930
Do	De Lacy	4,296
Do. B. M. in	Pre. R. R. levels	4,061
Do. corner stone in basement of old school house	Pre. R. R. levels	4,149
Do. Signal Station	U. S. Signal Office	4,262
Hellgate	Toner	3,318
Heron	N. P. R. R	2,261
Highwood Peak	N. P. Transcontinental Survey.	7,604
Hilgard, Mount	Hayden	11,000
Hodges	N. P. R. R	2,535
Hope	N. P. R. R	2,108
Hopley's Hole	Ludlow	4,894
Horse Plain	N. P. R. R	2,463
Horton	N. P. R. R	2,390
Howard	N. P. R. R	2,559
Huntley	N. P. R. R	3,012
Jefferson Bridge	De Lacy	4,672
Jefferson City	De Lacy	4,776
Jefferson City	Pre. R. R. levels	4,575
Jocko	N. P. R. R	2,507
Judith Gap	N. P. Transcontinental Survey.	4,650
Judith Peak	N. P. Transcontinental Survey.	6,386
Keogh, Fort	N. P. R. R	2,365
Last Spike	N. P. R. R	4,253
Laurel	N. P. R. R	3,253

Station.	Authority.	Elevation.
		Feet.
Lewis, Camp	Ludlow	3,890
Lewis and Clarke's Pass	P. R. R. Reports	6,323
Liberty Peak	Hayden	9,162
Little Blackfoot Pass	Pacific R. R. Reports	6,250
Livingston	N. P. R. R	4,485
Lorraine's	De Lacy	4,992
Lovell's	De Lacy	5,465
McClellan	N. P. R. R	2,685
McCloud's Peak	Mullan	7,500
Madison Pass	Pacific R. R. Reports	6,911
Maginnis, Fort	N.P. Transcontinental Survey.	4.310
Malden	N. P. Transcontinental Survey	4,700
Marias Pass	N. P. Transcontinental Survey	8,500
Martindale	N. P. Transcontinental Survey	4,707
Miles City	N. P. R. R	2,353
Milton	N. P. R. R	2,114
Missoula	N. P. R. R	3,195
Moccasin Peak	N. P. Transcontinental Survey	5,547
Moneda	U. & N. R. R	6,804
Montana City	De Lacy	4,191
Morgan	N. P. R. R	2,245
Moss Agate Springs	Ludlow	5,106
Muir	N. P. R. R	5,500
Mullan's Pass	Mullan	5,980
Mullan, tunnel summit	N. P. R. R	5,548
Myers	N. P. R. R	2,657
Nevada City	Hayden	5,548
Noxon	N. P. R. R	2,186
Old Baldy	Hayden	9,711
Oka	N. P. Transcontinental Survey	4,540
Owen, Fort	Toner	3,284
Painted Rock	N. P. R. R	3,953
Park City	N. P. R. R	3,385
Parson's Bridge, Jefferson River	Hayden	4,083
Perma	N. P. R. R	2,493
Philbrook	N, P. Transcontinental Survey	4,260
Placer	N. P. R. R	4,290
Pomaine's	De Lacy	5,826
Pompey's Pillar	N. P. R. R	2,869
Porcupine Butte	N. P. Transcontinental Survey	6,970
Reynolds' Pass	Pre. R. R. levels	6,838
Riverside	N. P. R. R	2,777
Rosebud	N. P. R. R	2,460
Salisbury Station, on the bench	Pre. R. R. levels	4,720
Sanders	N. P. R. R	2,593
Shaw, Fort, Signal Station	U. S. Signal Office	3,470
Sheridan	De Lacy	5,221
Skiotah	Mullan	7,200
South Nez Percé Pass	Pacific R. R. Reports	8,000
Sphinx Mountain	Hayden	10,880
Springdale	N. P. R. R	4,188
Spring Hill	U. & N. R. R	6,199
Square Butte,	N. P. Transcontinental Survey	5,750
Sterretts	De Lacy	5,217
Stillwater	N. P. R. R	3,570
Taghee Pass	Pre. R. R. levels	7,079
Ten Mile Station	De Lacy	4,244
Terry	N. P. R. R	2,240
Three Buttes, highest	Pacific R. R. Reports	6,700
Townsend	N. P. R. R	3,809
Trout Creek	N. P. R. R	2,375
Twin Peaks	N. P. Transcontinental Survey	7,413
U-Bet	N. P. Transcontinental Survey	4,540
Union Pass	Hayden	7,283

Station.	Authority.	Elevation.
		Feet.
U. N. Junction	N. P. R. R.	4,315
Utica	N. P. Transcontinental Survey	4,420
Virginia City	Hayden	5,824
Do	De Lacy	5,778
Do.....Signal Station	U. S. Signal Office	5,480
Ward's Peak	Hayden	10,371
Do.....timber line on	Hayden	9,156
Warm Springs Hotel	Pre. R. R. levels	4 296
Watson's Stage Station	Pre. R. R. levels	5,269
Wedge Mountain	Hayden	10,342
Whitehall Stage Station	Pre. R. R. levels	4,493
Williams	U. & N. R. R	6,603
Wolf Butte	N. P. Transcontinental Survey	4,760

NEBRASKA.

Station.	Authority.	Elevation.
		Feet.
	A. & N. R. R	1,250
	O. N. & B. H. R. R	1,756
	U. P. R. R	1,922
	St. J. & D. C. R. R	1,308
	U. P. R. R	3,063
	R. V. & B. & C. R. R	1,944
	B. & M. R. R. R	1,693
	U. P. R. R	4,712
	R. V. & B. & C. R. R	2,177
	B. & M. R. R. R	1,226
	B. & M. R. R. R	1,101
	B. & M. R. R. R	1,052
	B. & M. R. R. R	1,803
	B. & M. R. R. R	1,847
	Toner	3,421
k	S. C. & P. R. R	1,602
	B. & M. R. R. R	1,261
k	S. C. & P. R. R	1,175
d	A. & N. R. R	1,451
	St. J. & D. C. R. R	1,501
ı	R. V. & B. & C. R. R	2,975
	B. & M. R. R. R	1,256
	U. P. R. R	1,404
	B. & M. R. R. R	1,428
;	U. P. R. R	3,371
	S. C. & P. R. R	1,100
on	R. V. & B. & C. R. R	1,848
	B. & M. R. R. R	1,978
	B. & M. R. R. R	1,725
nd	U. P. R. R	2,657
	O. & R. V. R. R	1,687
	Toner	4,200
le	B. & M. R. R. R	894
	R. V. & B. & C. R. R	1,377
	R. V. & B. & C. R. R	1,367
	S. C. & P. R. R	1,691
ɔ	R. V. & B. & C. R. R	2,262
	B. & M. R. R. R	1,275
Fort	Toner	1,327
	St. J. & D. C. R. R	1,554
	R. V. & B. & C. R. R	1,998
ɔk	B. & M. R. R. R	1,028
ty	B. & M. R. R. R	1,708
ɜ	U. P. R. R	1,775
		5,702
	B. & M. R. R. R	1,435
	R. V. & B. & C. R. R	1,621
rt		1,876
	U. P. R. R	1,628
k	O. & R. V. R. R	1,185
	Toner	1,518
	U. P. R. R	1,453
	B. & M. R. R. R	1,801
	U. P. R. R	2,501
	B. & M. R. R. R	1,368
	S. C. & P. R. R	1,285
ı	R. V. & B. & C. R. R	2,572
	Toner	1,090

Station.	Authority.	Elevation.
		Feet.
Davenport	St. J. & D. C. R. R	1,660
David City	A. & N. R. R.	1,619
Dawson	A. & N. R. R	950
De Soto	Toner	1,100
Denton	B. & M. R. R. R	1,247
Dewitt	B. & M. R. R. R.	1,299
Dexter	Toner	3,000
Diller	R. V. & B. & C. R. R	1,349
Dorchester	B. & M. R. R. R.	1,501
Dunbar	B. & M. R. R. R.	1,051
Duncan	U. P. R. R	1,500
Eden	St. J. & D. C. R. R	1,729
El Dorado	Toner	1,693
Elk Creek	A. & N. R. R	1,072
Elk Horn	U. P. R. R	1,165
Elm Creek	U. P. R. R	2,273
Emerald	A. & N. R. R	1,206
Emerson	Toner	1,300
Endicott	R. V. & B. & C. R. R	1,291
Exeter	B. & M. R. R. R.	1,622
Fairbury	St. J. & D. C. R. R	1,316
Fairfield	St. J. & D. C. R. R	1,780
Fairmont	B. & M. R. R. R	1,656
Falls City	A. & N. R. R	904
Firth	A. & N. R. R	1,319
Fontenelle	Smithsonian Inst	1,000
Franklin	R. V. B. & C. R. R	1,820
Fremont	U. P. R. R	1,203
Friendville	B. & M. R. R. R.	1,573
Gannett	U. P. R. R	2,752
Garrison	A. & N. R. R	1,602
Genoa	O. N. & B. H. R. R	1,584
Georgetown	St. J. & D. C. R. R	1,844
Germantown	B. & M. R. R. R.	1,399
Gibbon	U. P. R. R	2,067
Gibraltar	A. & N. R. R	860
Gilmore	U. P. R. R	998
Glendale	Smithsonian Inst	1,300
Grafton	B. & M. R. R. R	1,699
Grand Island	U. & P. R. R	1,871
Gratton, Fort	Warren	8,325
Greenwood	B. & M. R. R. R.	1,141
Guide Rock	R. V. & B. & C. R. R	1,650
Hampton	B. & M. R. R. R	1,770
Harbine	R. V. & B. & C. R. R	1,673
Hardy	R. V. & B. & C. R. R	1,512
Harvard	B. & M. R. R. R	1,812
Hastings	B. & M. R. R. R	1,947
Heigler	R.V. & B. & C. R. R.	3,265
Hickman	A. & N. R. R.	1,247
Hooper	S. C. & P. R. R	1,237
Hubbell	R. V. & B. & C. R. R	1,460
Humboldt	A. & N. R. R	985
Humphreys	O. N & B. H. R. R.	1,650
Idaho	St. J. & D. C. R. R	2,003
Inavale	R. V. & B. & C. R. R	1,729
Indianola	R. V. & B. & C. R. R	2,380
Inland	B. & M. R. R. R	1,868
Ionia	Smithsonian Inst	3,000
Jefferson	St. J. & D. C. R. R.	2,079
Johnson	B. & M. R. R. R	1,230
Juniata	B. & M. R. R. R	2,054
Kanosha	Smithsonian Inst	1,050
Kearney Junction	U. P. R. R.	2,157

Station.	Authority.	Elevation.
		Feet.
ıw	U. P. R. R	2,088
rd	S. C. & P. R. R	1,157
ım	Toner	1,272
y	R. V. & B. & C. R. R	1,272
n	B. & M. R. R. R	1,155
'ood	Toner	1,800
Pole	U. P. R. R	3,833
'reek	O. N. & B. H. R. R	1,500
'ille	B. & M. R. R. R	1,040
l	B. & M. R. R. R	2,076
›k	R., V., B & C. R. R	2,511
›rson		2,695
›n	O. N. & B. H. R. R	1,585
lm	B. & M. R. R. R	1,291
.ette	B. & M. R. R. R	1,825
ell	U. P. R. R	2,718
	O. & R. V. R. R	1,218
	R., V., B. & C. R. R	2,880
d	A. & N. R. R	1,414
d	U. P. R. R	1,078
›ll, Camp		3,891
›n	O. N. & B. H. R. R	1,595
›ee	R., V., B. & C. R. R	1,878
›ka City	B. & M. R. R. R	941
ıa City	B. & M. R. R. R	885
'k	B. & M. R. R. R	2,126
›stle	Toner	800
›n	B. & M. R. R. R	1,151
ls		2,920
rson	S. C. & P. R. R	1,211
k	S. C. & P. R. R	1,532
Bend	U. P. R. R	1,279
Platte	U. P. R. R	2,808
o.....Signal Station	U. S. Signal Office	2,841
lla	B. & M. R. R. R	1,086
'y	Smithsonian Ins	1,266
›ale	S. C. & P R. R	1,722
	R. V. & B. & C. R. R	1,281
.on's	U. P. R. R	2,892
ıla	U. P. R. R	3,216
a, high water Missouri River	Mean result from R. R. levels.	967
o. low water Missouri River	Mean result from R. R. levels.	986
o. passenger depot	Mean result from R. R. levels.	1,039
o. Signal Station	U. S. Signal Office	1,113
olis	B. & M. R. R. R	974
.a	O. & R. V. R. R	1,642
on	U. P. R. R	2,326
l	R. V. & B. & C. R. R	2,079
'ra	B. & M. R. R. R	1,151
ion	U. P. R. R	1,005
	R. V. & B. & C. R. R	3,099
ee	R. V. & B. & C. R. R	1,180
	B. & M. R. R. R	903
'	S. C. & P. R. R	1,423
er Grove	Smithsonian Inst	1,400
› Center	O. M. & B. & H. R. R	1,537
ımouth	B. & M. R. R. R	983
ınt Dale	A. & N. R. R	1,311
Creek	U. P. R. R	2,394
'	U. P. R. R	4,386
›n	A. & N. R. R	885
ım	B. & M. R. R. R	1,378
'loud	R. V. & B. & C. R. R	1,690
›lican	R. V. & B. & C. R. R	1,944

Station.	Authority.	Elevation.
		Feet.
Reveitar	R. V. & B. & C. R. R	1,768
Reynolds	R. V. & B. & C. R. R	1,389
Richland	Toner	1,350
Risings	O. & R. V. R. R	1,597
Roca	A. & N. R. R	1,219
Rock Bluffs	Smithsonian Inst	1,100
Rodgers	Toner	1,359
Ruby	A. & N. R. R	1,425
Saint Edward	O. N. & B. H. R. R	1,666
Salem	A. & N. R. R	915
Saltillo	A. & N. R. R	1,178
Schuyler	U. P. R. R	1,356
Scribner	S. C. & P. R. R	1,266
Seward	B. & M. R. R. R	1,445
Shelton	U. P. R. R	2,027
Sidney	U. P. R. R	4,095
Silver Creek	U. P. R. R	1,555
South Bend	B. & M. R. R. R	1,051
Stanton	S. C. & P	1,486
Staplehurst	A. & N. R. R	1,482
Steele City	St. J. & D. C. R. R	1,269
Sterling	A. & N. R. R	1,185
Stratton	R. V. & B. & C. R. R. R	2,800
Stromsburgh	O. & R. V. R. R	1,636
Superior	R. V. & B. & C. R. R	1,574
Sutton	B. & M. R. R. R	1,689
Syracuse	B. & M. R. R. R	1,056
Table Rock	A. &. N. R. R	1,028
Tamora	B. & M. R. R. R	1,559
Tecumseh	B. & M. R. R. R	1,113
Trenton	R. V. & B. & C. R. R	2,690
Ulysses	A. & N. R. R	1,524
Utica	B. & M. R. R. R	1,589
Valley	U. P. R. R	1,149
Valparaiso	O. & R. V. R. R	1,316
Waco	B. & M. R. R. R	1,627
Wahoo	O. & R. V. R. R	1,183
Washington	Toner	1,025
Waverly	B. & M. R. R. R	1,136
Weston	O. & R. V. R. R	1,261
West Point	S. C. & P. R. R	1,326
Wilber	B. & M. R. R. R	1,339
Willow Island	U. F. R. R	2,529
Wisner	S. C. & P R. R	1,393
Woodlawn	B. & M. R. R. R	1,186
Wood River	U. P. R. R	1,996
Wymere	B. & M. R. R. R	1,232
York	B. & M. R. R. R	1,642

NEVADA.

Station.	Authority.	Elevation.
		Feet.
'ass	Pacific R. R. Reports	7,615
ɪanch	Wheeler	5,990
ount	Wheeler	6,787
Peak	King	8,391
Springs	Wheeler	4,051
	E. & P. R. R	5,911
ɪn Flat Peak	Wheeler	6,659
ɔn's Ranch	Wheeler	4,041
ɪe Spring	Wheeler	7,201
	Wheeler	6,445
ɪe Valley	Simpson	5,633 to 5,690
Peak	King	8,433
ɔ's Ranch	Wheeler	6,517
ɪ	C. P. R. R	4,548
	Williamson	7,441
	Wheeler	6,594
	Williamson	6,451
Mill Point	Wheeler	5,327
ɔre Mine	Wheeler	5,729
' Spring	Wheeler	5,906
Peak	Wheeler	6,599
Mountain	C. P. R. R	4,511
t	Wheeler	8,092
ve	C. P. R. R	4,695
Head	Powell	7,570
ek Pass	King	8,922
lliams' Ranch		3,500
s, Mount	Wheeler	10,345
's Ranch, Reese River Valley	Wheeler	5,743
	Toner	5,423
Rock Valley	Hayden	4,900
ille, Mount	King	11,200
ɪd, Mount	King	11,321
Knob Peak	Wheeler	6,202
s	C. & P. R. R	3,929
e Mine	Wheeler	5,221
ɪd's Ranch, Carson River Valley	Wheeler	4,151
alley	Simpson	6,000
Peak	King	8,387
Spring	Wheeler	4,076
City	Wheeler	6,386
n Mountain	Wheeler	9,040
Hill Peak	Wheeler	11,405
's Peak	Powell	6,780
sburgh	Wheeler	4,278
ɪeld Spring	Wheeler	5,324
o	Wheeler	945
ɔll's Spring	Wheeler	7,366
Rock	Wheeler	5,628
ɔring	Powell	2,050
Peak	King	8,035
	Wheeler	4,849
	C. P. R. R	4,897
Peak	King	7,754
e Point	Powell	7,330
City	C. P. R. R	4,630
	Wheeler	4,700

Station.	Authority.	Elevation.
		Feet.
Carson City, Friends' Observatory	Wheeler	4,660
Carson Hot Springs	Wheeler	4,592
Carson Lake	Wheeler	3,883
Do	Pacific R. R. Reports	3,840
Cave Valley	Wheeler	6,464
Cedar Mountains	King	6,500
Cedar Valley	Wheeler	7,073
Cerro Gordo Peak	Wheeler	9,432
Chalk Well	Wheeler	7,604
Chapman's Ranch	Wheeler	4,932
Charcoal Mountain	Powell	7,290
Charleston Peak	Petermann	10,874
Chataya Peak	King	7,766
Cherry Valley	Wheeler	7,473
Chinatown	Simpson	4,360
Chollar Potosi Mining Co's Office	Wheeler	6,242
Churchill Butte	Wheeler	6,009
Churchill, Fort	Med. Dept. U. S. A.	4,284
Do	Williamson	4,319
Clark's	C. P. R. R.	4,263
Clifton		6,339
Clover Valley settlement	Powell	5,300
Do	Wheeler	4,902
Cluro	Toner	4,785
Cold Spring	Wheeler	6,173
Cold Springs	Wheeler	5,418
Cold Springs	Wheeler	4,200
Como Peak	Wheeler	9,017
Cortez Peak	King	8,365
Cory, Mount	Wheeler	11,32[illegible]
Cottage, Camp	Wheeler	6,43[illegible]
Cottonwood Spring	Wheeler	3,45[illegible]
Cowles Peak	Wheeler	9,9[illegible]
Cox's Station	Wheeler	4,37[illegible]
Coyote		2,4[illegible]
Coyote Spring	Wheeler	3,6[illegible]
Crescent	Wheeler	5,4[illegible]
Crescent Mill	Wheeler	6,1[illegible]
Crosman Valley	Simpson	4,8[illegible]
Crossman's Spring	Wheeler	4,3[illegible]
Crystal Spring	Wheeler	5,7[illegible]
Cumberland	King	5,[illegible]
Curtis, Mount	Powell	9,[illegible]
Custer Springs, Steptoe Valley	King	5,[illegible]
Dalton Peak	King	9,[illegible]
Darby Mine	Wheeler	4,[illegible]
Davidson, Mount	Wheeler	7,[illegible]
Do	King	7,[illegible]
Davies, Mount	Wheeler	11,[illegible]
Dayton	Wheeler	4,[illegible]
Dead Horse Well	Wheeler	4,[illegible]
Deep Hollow Station	Wheeler	5,[illegible]
Deeth	C. P. R. R.	5,[illegible]
Desatoya Peak	Wheeler	9,[illegible]
Desert Wells	Wheeler	[illegible]
Deyeringham's Ranch	Wheeler	[illegible]
Diamond	Eureka & P. R. R.	[illegible]
Diamond Valley	King	[illegible]
Disappointment Spring	Wheeler	[illegible]
Division Peak	Wheeler	[illegible]
Dodge Valley	Simpson	[illegible]
Duck Valley	Wheeler	[illegible] to [illegible]

Station.	Authority.	Elevation.
		Feet.
ng's Ranch	Wheeler	4,571
Ranch	Wheeler	6,037
Valley	Simpson	4,587
Valley settlement	Powell	5,480
ate	Wheeler	5,291
ustice Hill	Wheeler	5,861
Range Pass	Wheeler	7,546
ore, Mount	Powell	7,692
rn Ranch	Wheeler	6,123
	C. P. R. R	5,063
	Wheeler	5,148
orth	Wheeler	6,871
ant Pass Peak	Wheeler	7,876
ant Peak	Wheeler	8,509
, Mount	King	6,546
	Wheeler	6,439
e City	Wheeler	4,593
onsolidated Mine	Wheeler	5,268
Peak	King	7,725
e Peak	King	7,548
a	Wheeler	5,906
	Eureka & P. R. R	6,371
a Mine	Wheeler	5,978
ew Peak	Wheeler	8,412
do	King	8,199
ake	Wheeler	4,745
	Wheeler	6,866
Pass	King	8,028
lin Lake	Pacific R. R. Reports	6,200
lin Valley	Pacific R. R. Reports	6,248
town	Wheeler	5,054
h's Peak	Wheeler	10,779
	Wheeler	5,650
ountain	Petermann	6,200
Ranch	Wheeler	4,154
a Peak	King	10,994
do	Wheeler	11,077
	Simpson	4,824
	Wheeler	4,801
's Ranch	Wheeler	4,352
ina Post, near Succor Mine	Wheeler	5,452
's Crest	Powell	11,000
ook	Wheeler	6,282
ale	Wheeler	4,453
Peak	King	11,237
ill Mine	Wheeler	6,374
ida	C. P. R. R	4,385
e Lake	Pacific R. R. Reports	5,952
e Pass	U. P. R. R. surveys	6,065
e Peak	King	10,491
n Peak	Wheeler	10,964
Peak	King	8,307
e Peak	Wheeler	8,990
Mount	Wheeler	9,965
Vine Spring	Powell	1,930
Valley	Hayden	4,300
s Ranch	Wheeler	4,187
Valley	Hayden	5,600
Valley	Pacific R. R. Reports	5,368 to 6,139
erry Springs	Powell	2,620
Peak	King	11,298
ray House	Wheeler	5,006
k	C. P. R. R	5,230

Station.	Authority.	Elevation.
		Feet.
Halleck Camp	King	5,671
Do. do	Smithsonian Inst	5,600
Do. do	Wheeler	5,790
Hamilton	Wheeler	7,600
Hastings Pass	U. P. R. R. surveys	6,220
Do	Simpson	6,580
Hawthorne	Carson & Colorado R. R	4,569
Hay Ranch	Eureka & P. R. R	5,171
Hiko	Wheeler	3,881
Hill and Gaines Ranch	Wheeler	3,944
Homer	Wheeler	5,821
Home Station	Wheeler	4,816
Honey Lake		4,095
Hot Springs	C. P. R. R	4,072
Do	Wheeler	4,731
Hot Springs Peak	Wheeler	7,692
Hot Springs, Walker's River		7,334
Houstan's Wells	Wheeler	4,149
Humboldt	C. P. R. R	4,236
Humboldt River Basin		4,200
Huntington Valley	Wheeler	5,300 to 6,300
Independence	C. P. R. R	6,007
Indian Agency, Walker River	Wheeler	4,120
Indian Pass	King	9,057
Indian Spring	Wheeler	3,402
Inyo Peak	King	11,337
Ione	Wheeler	6,844
Iron Point	C. P. R. R	4,375
Ivanpah	Wheeler	4,483
Ives Pass	King	6,672
Janesville	Wheeler	4,386
Jones' Mills Ranch	Wheeler	5,736
Kanan's Ranch	Powell	3,200
Kate, Mount	King	6,187
Kingston		6,247
King's Valley	Hayden	4,850
Knickerbocker Mine	Wheeler	5,867
Kobeh Valley	Simpson	6,000 to 6,600
Ladrones, Mount	Wheeler	9,214
Lassen's Meadows	Pacific R. R. Reports	4,153
Las Vegas	Wheeler	2,074
Do	Wheeler	2,018
Lee's Mill, Mason Valley	Wheeler	4,350
Locust Spring	Wheeler	6,167
Lodi	Wheeler	5,356
Lodi Peak	Wheeler	6,486
Long Valley	Wheeler	6,216
Do	Simpson	6,195
Lovelocks	C. P. R. R	3,977
Lyon, Mount	Wheeler	8,793
Lyonsville	Wheeler	5,401
McCabe's Pass	U. P. R. R. Surveys	5,019
McClellan Mountain	Wheeler	7,532
McClellan's Cove	Wheeler	5,892
McDermott, Camp	Med. Dept., U. S. A	4,700
McGarry, Camp	Med. Dept., U. S. A	6,000
McKenney's, on Lake Tahoe	Wheeler	6,2[illegible]2
McKinney's Pass	King	5,5[illegible]2
McMahon's Ranch, Reese River Valley	Wheeler	6,5[illegible]2
Maggie Peak	King	8,1[illegible]7
Mahogany, Mount	Wheeler	8,3[illegible]63
Mahogany Peak	King	9,241

Station.	Authority.	Elevation.
		Feet.
Manzano, Mount	Wheeler	10,086
Marlett's Ranch	Wheeler	8,074
Mason's Ranch	Wheeler	4,348
Matinango Peak	Wheeler	8,845
Meadow Valley	Powell	4,400 to 4,800
Mill City	C. P. R. R	4,226
Miller's Spring	Powell	6,220
Millford	Wheeler	4,204
Mineral	Eureka & P. R. R	5,443
Mineral Pass	Wheeler	6,969
Moleen	C. P. R. R	4,982
Monte Cristo Mill	Wheeler	7,596
Montello	C. P. R. R	5,010
Monument Hill	Wheeler	6,734
Moore	C. P. R. R	6,166
Moore Campbell's Ranch	Wheeler	6,267
Morey	Wheeler	7,384
Mosca, Mount	Wheeler	9,723
Mountain Spring	Wheeler	5,501
Mud Lake	Pacific R. R. Reports	4,079
Mud Lakes Valley	King	3,862
Do	Pacific R. R. Reports	4,000 to 4,400
Mud Meadows	Wheeler	4,318
Mud Spring	Wheeler	4,900
Nannie's Peak	King	9,046
Nelson's Station	Wheeler	4,245
Nevada City	Toner	6,205
Newton's Ranch, near Honey Lake	Wheeler	4,079
North Granite Peak	Wheeler	8,363
North Pass	C. P. R. R. Surveys	5,964
Occidental Mills, Virginia City	Wheeler	5,480
Olcott, Mount	Wheeler	7,974
Old Kentuck Ranch, Sutro Tunnel Road	Wheeler	5,684
O'Neill's Ranch	Wheeler	5,581
Ophir Water Tank	Wheeler	6,509
Oreana	C. P. R. R	4,181
Ormsby Peak	King	8,388
Osha, Mount	Wheeler	10,023
Osino		5,100
Owyhee	Wheeler	5,392
Oxford Peak	King	7,556
Overton	Powell	1,360
Pah-ghun-pah-ghun Spring	Wheeler	2,282
Pahranagut Lake		3,400
Pahrumpe Valley	Simpson	5,700 to 6,000
Pah-Ute Peak	Wheeler	8,618
Palisade, junction with Eureka and Palisade R. R.	C. P. R. R	4,821
Panacca	Powell	4,770
Do	Wheeler	4,718
Panacca Head	Powell	7,450
Paradise Peak	Wheeler	8,662
Paradise Valley	Hayden	4,500
Park Peak	Wheeler	8,683
Patterson's Ranch	Wheeler	5,213
Peavine Mount	King	6,217
Peavine Peak	Wheeler	8,275
Peavine Ranch	Wheeler	4,952
Pedernal, Mount	Wheeler	7,580
Peko	C. P. R. R	5,204
Do	Wheeler	5,189

Station.	Authority.	Elevation.
		Feet.
Peko Peak	King	6,620
Pennoyer Spring	Wheeler	6,652
Pequot	C. P. R. R	6,184
Pequot Pass	U. P. R. R. Surveys	6,143
Do	C. P. R. R. Surveys	6,180
Peterson's Ranch	Wheeler	6,137
Petona Mine	Wheeler	6,639
Phelps Valley	Simpson	6,150
Piermont	Wheeler	5,581
Pilot Knob	Wheeler	10,758
Piñon Pass	King	6,533
Pinto, Mount	Wheeler	8,618
Do	King	8,715
Pinto Spring	Wheeler	5,683
Pioche	Wheeler	5,942
Do	Powell	6,100
Do..Signal Station	U. S. Signal Office	6,220
Placer, Mount	Wheeler	8,965
Point of Rocks Peak	King	9,610
Poston, Mount	Wheeler	11,977
Proctor's Ranch, Truckee River	Wheeler	3,963
Prometheus Mountain	King	8,256
Do	Wheeler	8,151
Pueblo Valley	Hayden	5,000
Pyramid Lake	Pacific Railroad Reports	4,890
Pyramid Lake Indian Agency	Wheeler	3,980
Quartz Mountain	Wheeler	8,700
Quinn's River Valley	Hayden	4,850
Quinn Cañon	Wheeler	6,256
Quinn's River Valley	Hayden	4,850
Rabbit Hole Spring	King	4,374
Ragtown	King	4,039
Do	Wheeler	4,002
Railroad Peak	King	8,569
Do.....(Black Rock)	Wheeler	5,436
Ramsell City	Wheeler	5,324
Raspberry	C. P. R. R	4,327
Rattlesnake Hill	Wheeler	6,616
Rattlesnake Spring	Wheeler	6,038
Raven's Nest Peak	King	8,393
Raw Mountain	Wheeler	8,404
Red Dome Pass	U. P. R. R. Surveys	4,720
Do	C. P. R. R. Surveys	4,821
Reese River Valley	Simpson	5,600
Reno	Wheeler	4,484
Do..Junction Virginia City and Truckee R. R	C. P. R. R	4,497
Robert's Peak	King	10,132
Rock Island Mine	Wheeler	5,678
Rose Creek	C. P. R. R	4,322
Rose Mountain	King	7,949
Rose Mountain	King	6,448
Rose Mountain	Wheeler	10,820
Rose Valley	Wheeler	5,401
Rose Valley Settlement	Powell	5,450
Ruby, Camp	Wheeler	6,153
Do	Medical Department, U. S. A.	5,922
Ruby Valley	Simpson	6,000
Rye Patch	C. P. R. R	4,257
Sacramento		6,575
Saint Clair	Wheeler	3,980
Saint Joseph	Powell	1,490
Saint Thomas	Powell	1,180

Station.	Authority.	Elevation.
		Feet.
homas	Wheeler	1,600
lley	Hayden	4,200
tonio	Wheeler	5,281
prings	Wheeler	3,926
an		8,075
an Peak	King	10,982
ga Springs	Wheeler	264
r Springs	Wheeler	6,186
r's Peak	Wheeler	6,865
r's Station	Wheeler	4,026
usky's Pass	U. P. R. R. Surveys	6,355
ltlein's Ranch	Wheeler	6,220
a Peak	King	9,545
Ranch, near Reno	Wheeler	4,439
reek Range (highest peak)	Wheeler	11,200
(mean height)	Wheeler	8,000
ntown		4,445
ne	C. P. R. R	4,636
ne Peak	King	9,760
ne Wells	King	5,796
Peak	King	9,387
Age Station	Wheeler	6,014
City, old foundry	Wheeler	4,940
Peak Mines	Wheeler	4,257
nd's Springs		5,000
ter Peak	Wheeler	7,511
Creek Depot		4,570
h Peak	King	7,463
	Wheeler	7,402
h Springs	Wheeler	4,469
Valley	Wheeler	6,102
Valley Pass	King	6,251
Valley Spring	Wheeler	7,768
Mountain	King	11,041
ty	Toner	7,500
eak	King	9,925
Peak	Wheeler	7,115
oat Springs	Wheeler	4,595
Valley	Wheeler	5,730
	Simpson	5,800 to 6,200
g Mill	Wheeler	6,818
House	C. P. R. R	4,422
Cabin	Wheeler	6,390
Ferry	Powell	695
	Wheeler	1,108
Peak	King	6,650
's Ranch	Wheeler	4,749
Peak	King	8,477
Loaf Mountain	King	6,164
r Springs	Wheeler	3,972
t Spring Peak	Powell	7,010
t Springs	Powell	6,327
or G. & S. mine	Wheeler	6,415
ille	Wheeler	4,218
Springs	Wheeler	5,366
gua Peak	King	8,751
	Wheeler	8,772
's Ranch	Wheeler	4,720
te, Mount	Wheeler	7,254
a	C. P. R. R	4,812
ope Peak	Wheeler	10,938
Peak	King	9,240
and Springs Valley	Hayden	5,950

Station.	Authority.	Elevation.
		Feet.
Ti-ba-ba Springs	Wheeler	6,248
Tibbie Mountain	Wheeler	7,383
Timpahute Mountain	Wheeler	8,600
Timpahute Spring	Wheeler	6,892
Tinnah-nah Springs	Wheeler	4,080
Tissapook Spring	Wheeler	5,832
Titilla	Wheeler	7,060
Toano	C. P. R. R	5,973
Todhunter's Camp, Long Valley	Wheeler	5,779
To-ha-cum Peak	Wheeler	8,174
Toyabe Peak	Wheeler	10,144
Trinity Peak	King	7,500
Trojan Mine	Wheeler	6,086
Truckee Valley	Hayden	4,000 to 5,100
Tulasco		5,418
Tule Spring		2,366
Tutib, Mount	Wheeler	7,062
Twin Lakes	Wheeler	7,843
Uiyabi Pass	P. R. R. Reports	6,233
Ungoweah Mountains	Simpson	7,500 to 8,000
Union	Toner	6,160
Upper Caledonia Mine	Wheeler	6,967
Utah Mine	Wheeler	5,996
Vaughan's Ranch	Wheeler	5,316
Verdi	C. P. R. R	4,895
Virginia City	C. P. R. R	6,205
Do	Toner	6,200
Do.....astronomical monument	Wheeler	6,339
Do.....office Chollar Potosi Mine	Wheeler	6,242
Do.....165 G street	Wheeler	6,118
Virgin Valley (lower)	Powell	700 to 2,000
Vista	Toner	4,400
Vivian Mine	Wheeler	5,415
Wadsworth	C. P. R. R	4,077
Do	Wheeler	4,095
Wah-ya-bah Springs	Wheeler	5,188
Walker's Lake	Pacific R. R. Reports	3,840
Do	Carson and Colorado R. R	4,147
Walker's Ranch	Wheeler	5,146
Walker's River Basin		4,100
Walker's River Meadows		6,500
Wallace's Ranch	Wheeler	5,787
Wall Spring	Wheeler	3,912
Wanahonupe Valley	Simpson	5,543
Washington	Wheeler	6,992
Washoe City	Wheeler	5,021
Washoe Lake	Wheeler	5,046
Washoe Valley	Hayden	4,000
Water Cañon		2,140
Wauguyhi Peak	King	8,528
Weahbah Range	Simpson	7,000 to 8,000
Welche's Ranch	Wheeler	5,771
Welch's Station	Wheeler	5,236
Wells	C. P. R. R	5,629
West Belcher Mine	Wheeler	6,098
West Gate	Wheeler	4,504
West Point	Wheeler	1,755
Wheeler Peak	Wheeler	13,036
Do.....timber line on		11,500
White Bluff Spring	Wheeler	5,020

Station.	Authority.	Elevation.
		Page.
White Pine Range Pass	Wheeler	5,860
Do	Wheeler	6,326
White Pine Valley	Wheeler	6,000
White Plains	C. P. R. R	3,894
White Rock	Wheeler	4,818
Wilcox Ranch	Wheeler	5,396
William Penn Mine	Wheeler	5,236
Willow Spring		5,859
Winnemucca	C. P. R. R	4,332
Do.....Signal Office	U. S. Signal Office	4,327
Winnemucca Lake	Wheeler	3,825
Winnemucca Peak	King	6,869
Winter's Ranch	Wheeler	5,145
Woodruff Valley	Simpson	6,000
Wood's Ranch, Pyramid Lake	Wheeler	3,861
Worthington Peak	Wheeler	8,400

NEW HAMPSHIRE.

Station.	Authority.	Elevation.
		Feet.
Adam's Mountain	Appalachian Club	5,776
Do.....Sam Adams' Peak	Appalachian Club	5,554
Do.....J. Q. Adams' Peak	Appalachian Club	5,384
Do.....Nowell's Peak	Appalachian Club	5,313
Alton Bay Hotel	Suncook Valley R. R	530
Ammonoosuc Station, base of Mount Washington	Bost., Con. & Mont. R. R	2,668
Andover	Northern R. R	628
Ashuelot	Ashuelot R. R	434
Atkinson	Boston & Maine R. R	57
Bald Mountain, Franconia Notch	Appalachian Club	2,310
Barnstead Centre	Suncook Valley R. R	527
Bath	Bost., Con. & Mont. R. R	521
Belknap Mountain, lower peak of the Twins	Appalachian Club	2,259
Bemis Station, Hart's location	Port. & Ogden R. R	996
Berlin Falls	Grand Trunk R. R	1,016
Bethlehem	Bost. Con. & Mont. R. R	1,18
Do....Sinclair House	Appalachian Club	1,45
Do....Maplewood House	Appalachian Club	1,4
Black Mountain, Sandwich Dome, highest peak	Appalachian Club	4,07
Do.....Jennings Peak	Appalachian Club	3,58
Do.....Sachem Peak, higher	Appalachian Club	3,05
Do.....lower	Appalachian Club	2,96
Do.....Middle Acteon Peak	Appalachian Club	2,54
Do.....Bald Knob	Appalachian Club	2,39
Blue Mountain	Guyot	4,37
Boot's Spur	Appalachian Club	5,52
Boscawen	Northern R. R	27
Boy Mountain, near Jefferson	Appalachian Club	2,27
Bradford	Concord & Claremont R. R	67
Bray Hill, Whitefield	Appalachian Club	1,63
Brick House	Guyot	3,85
Campton, Black Mountain House	Appalachian Club	6
Do... Chase's Hillside House	Appalachian Club	64
Campton Hollow P. O. (approx.)	Appalachian Club	70
Canaan	Northern R. R	95
Candia	Concord & Portsmouth R. R	44
Cannon Mountain	Guyot	3,85
Carrigain	Guyot	4,67
Carr's Mountain	Guyot	3,4
Carter Mountain	Guyot	4,8
Chapin's Switch	Sullivan Co. R. R	3
Charlestown	Sullivan Co. R. R	3
Cherry Mountain	Guyot	3,6
Chichester	Suncook Valley R. R	3
Chicoma	Guyot	3,5
Claremont	Concord & Claremont R. R	5
Claremont Junction	Concord & Claremont R. R	4
Clay, Mount	Guyot	5,5
Clinton, Mount	Appalachian Club	4,3
Do	Guyot	4,3
Do..... Timber line on		4,2
Concord	Concord & Claremont R. R	2
Connecticut River Bridge, near Bellow's Falls	Sullivan Co. R. R	
Connecticut River Bridge, near Windsor	Sullivan Co. R. R	

Station.	Authority.	Elevation.
		Feet.
Contoocook	Contoocook Valley R. R	373
Conway Centre Station	Port. & Ogden R. R	455
Conway Corner (Chateaugay), west end of village	P., G. F. & C. R. R	466
Cooke's Hill, West Campton	Appalachian Club	2,236
Crawford House Station, summit	Port. & Ogden R. R	1,903
Crawford Mountain	Guyot	3,184
Dalton	Bost., Con. & Mont. R. R	866
Danbury	Northern R. R	826
Deception, Mount	Guyot	2,449
Derry	Manch. & Lawrence R. R	238
Dimond's Corner	Concord & Claremont R. R	425
Dover	Boston & Maine R. R	72
Durham	Boston & Maine R. R	70
Eagle Cliff	Guyot	3,446
Eagle Head	Guyot	4,216
East Andover	Northern R. R	661
East Concord	Geol. S'vy of N. H	246
East Haverhill	Bost., Con. & Mont. R. R	773
East Jaffrey	Monadnock & Petersboro R.R	1,032
East Kingston	Boston & Maine R. R	130
East Lebanon	Northern R. R	766
East Rindge	Monadnock & Petersboro R. R	1,003
East Wakefield	P., G. F. & C. R. R	678
East Westmoreland	Cheshire R. R	709
East Wilton	Nashua, Wilton & Petersborough R. R	328
Echo Lake	Guyot	1,926
Do	Appalachian Club	1,929
Echo Mountain	Guyot	3,170
Elkin's Fisher, Tecumseh Group	Appalachian Club	2,621
Elliot	P., G. F. & C. R. R	21
Enfield	Northern R. R	768
Epping	Concord & Portsmouth R. R	154
Epsom	Geol. Survey of N. H	342
Do	Suncook Valley R. R	362
Do. M. M. Steele's residence	Appalachian Club	781
Exeter	Boston & Maine R. R	58
Fabyan House	Bost., Con. & Mont. R. R	1,571
Fisher Mountain, Tecumseh Group	Appalachian Club	3,470
Fitzwillian	Cheshire R. R	1,063
Fort Mountain, Epsom	Appalachian Club	1,431
Franconia, Franconia House		1,054
Do....Lafayette House	Appalachian Club	990
Franklin	Northern R. R	363
Franklin, Mount	Appalachian Club	4,917
Do	Guyot	4,904
Gilford, Locke's Farm-house	Appalachian Club	643
Gilmanton Hill	Guyot	1,329
Gilmanton, Iron Works Village	Suncook Valley R. R	647
Glen Station	Port. & Ogden R. R	530
Goffstown Station	Manch. & N. Weare R. R	304
Gorham	Grand Trunk R. R	794
Grafton	Northern R. R	848
Grafton Centre	Northern R. R	872
Great Falls	Boston & Maine R. R	178
Do....(Conway) Junction	P., G. F. & C. R. R	90
Greenfield	Petersborough R. R	800
Green Mountain, Tecumseh Group	Appalachian Club	3,547
Green's Cliff	Guyot	1,329
Groveton	Grand Trunk R. R	884
Groveton Junction	Bost., Con. & Mont. R. R	901
Gunstock Mountain	Appalachian Club	2,400
Hampstead Station	Nashua & Rochester R. R	258

Station.	Authority.	Elevation.
		Feet.
Harrisville	Manch. & N. Weare R. R	1,334
Haverhill Depot	Conn. & Pass. R. R	412
Henniker	Contoocook Valley R. R	439
Hillsborough Bridge Station	Contoocook Valley R. R	574
Hollis	Worcester & Nashua R. R	195
Jefferson, Mount Adams House		1,648
Do...Starr King House	Appalachian Club	1,437
Jefferson, Mount	Guyot	5,714
Kearsarge Mt	Eastman	2,726
Keene	Ashuelot R. R	466
Kendall's Crossing	Sullivan Co. R. R	303
Kinsman Mountain	Guyot	4,200
Do.....highest summit seen from Lafayette	Appalachian Club	4,370
Kittery	P., G. F. & C. R. R	17
Lafayette, Mount	Appalachian Club	5,249
Do	Guyot	5,290
Do .....lower north peak		5,081
Do .....Eagle Lakes		4,146
Do .....Eagle Cliff Notch		2,990
Lake of the Clouds	Guyot	5,009
Do	Appalachian Club	5,053
Lancaster	Bost., Con. & Mont. R. R	870
Lebanon	Northern R. R	510
Lincoln Mountain	Appalachian Club	5,098
Lisbon	Bost., Con. & Mont. R. R	577
Littlefield's Crossing	Concord & Portsmouth R. R	126
Little Monroe Mountain	Guyot	5,204
Do	Appalachian Club	5,220
Littleton	Bost., Con. & Mont. R. R	817
Do ..Oak Hill House	Appalachian Club	975
Lyndeborough	Petersborough R. R	624
Madbury	Boston & Maine R. R	108
Madison, Mount	Appalachian Club	5,336
Do	Geol. S'v'y of N. H	5,365
Madison, N. W. end of 6-mile pond	P., G., F. & C. R. R	476
Mad River Peak	Guyot	4,397
Manchester	Manch. & Lawrence R. R	181
Marlborough	Cheshire R. R	789
Mast Yard	Concord & Claremont R. R	375
Meredith Village	Bost., Con. & Mont. R. R	542
Middle Fisher Mountain, Tecumseh Group	Appalachian Club	2,790
Milan	Grand Trunk R. R	1,060
Milton Station	P., G., F. & C. R. R	415
Monadnock, Mount	Guyot	3,718
Monroe, Mount	Appalachian Club	5,361
Moose hillock	Guyot	4,790
Morijah, Mount	Guyot	4,653
Mount Sunapee Station	Concord & Claremont R. R	1,128
Nashua	Boston, Lowell & Nashua R. R	13[illegible]
Do. Main street	Nashua, Acton & Boston R. R	3[illegible]
Do. Concord depot	Worcester & Nashua R. R	12[illegible]
Do. Lake street	Nashua, Acton & Boston R. R	[illegible]
Newbury Summit, on rail	Concord & Claremont R. R	1,1[illegible]
Do .....(rock cut) over rail	Concord & Claremont R. R	1,1[illegible]
Newmarket	Boston & Maine R. R	
Newmarket Junction	Concord & Portsmouth R. R	
Newport	Concord & Claremont R. R	
Newton	Boston & Maine R. R	
Do. R. R. Summit	Boston & Maine R. R	
North Boscawen	Northern R. R	
North Charlestown	Sullivan Co. R. R	
North Conway Station	P., G. F. & C. R. R	
Do.....(village plains)	Port. & Ogden R. R	

Station.	Authority.	Elevation.
		Feet.
North Lisbon	Bost., Con. & Mont. R. R	667
North Stratford	Grand Trunk R. R	902
North Weare	Manch. & N. Weare R. R	489
Osceola Mountain	Appalachian Club	4,417
Ossipee, ¼ mile from village	P., G. F. & C. R. R	642
Ossipee Mountain, East Knoll	Appalachian Club	2,774
Do.....Melvin Peak	Appalachian Club	2,950
Owl's Head	Guyot	2,950
Do.... (Cherry Mountain)	Appal. Club	3,302
Parker's Station	Manch. & N. Weare R. R	319
Pemigewasset Peak	Guyot	4,420
Petersboro Village	Monadnock & Petersboro R. R.	744
Piper Mountain, lowest peak of the Belknaps	Appalachian Club	2,063
Pittsfield	Suncook Valley R. R	493
Plaistow	Boston & Maine R. R	92
Do..brickyard	Boston & Maine R. R	86
Pleasant, Mount	Guyot	4,764
Do	Appalachian Club	4,771
Pleasant, Mount	Appalachian Club	1,896
Plymouth	Bost., Con. & Mont. R. R	473
Profile Lake	Appalachian Club	1,747
Profile Mountain, true summit	Appalachian Club	4,114
Prospect Mountain, Lancaster	Appalachian Club	2,062
Raymond	Concord & Portsmouth R. R	198
Rochester	Nashua & Rochester R. R	226
Rollinsford	Boston & Maine R. R	115
Rowe's Hill, West Campton	Appalachian Club	1,235
Rumney	Bost., Con. & Mont. R. R	520
Russell's (or S. Greenfield)	Petersborough R. R	820
Salmon Falls	Boston & Maine R. R	107
Sandwich Dome	Guyot	3,969
Sandwich Notch, Campton, Sandwich road	Appalachian Club	1,754
Scar Ridge, Thornton Gore	Appalachian Club	3,824
Scott's Mills, crossing B., C. & M. R. R	Port. & Ogden R. R	860
Shelburne	Grand Trunk R. R	704
Sinapee, Mount	Petermann	1,636
South Charlestown	Sullivan Co. R. R	303
South Danbury	Northern R. R	732
South Keene	Cheshire R. R	560
South Lancaster	Bost., Con. & Mont. R. R	867
South Newmarket	Boston & Maine R. R	38
Springfield	Sullivan Co. R. R	374
Stark	Grand Trunk R. R	954
Star Lake, between Madison and Adams	Appalachian Club	4,890
Starr King, Mount	Appalachian Club	3,943
Stone Mountain, Tecumseh Group	Appalachian Club	3,376
Stratford Hollow	Grand Trunk R. R	863
Sugar Hill, Coast Survey Signal		1,781
Do.....Goodnow House	Appalachian Club	1,334
Do.....post-office		1,351
Sunapee	Concord & Claremont R. R	956
Sunset Hill, Campton Village	Appalachian Club	1,035
Swanzey	Ashuelot R. R	473
Table Mountain	Guyot	3,305
Taylor's Hill, West Campton	Appalachian Club	1,406
Tecumseh Mountain, highest peak		4,105
Do.....S. W. shoulder		3,878
Tremont	Guyot	3,393
Troy	Cheshire R. R	1,002
Twin Mountain	Guyot	4,930
Twin Mountain Station	Bost., Con. & Mont. R. R	1,375
Upper Bartlett Station	Port. & Ogden R. R	660
Wakefield Station	P., G. F. & C. R. R	690

Station.	Authority.	Elevation.
		Feet.
Wallace Hill, Bethlehem	Appalachian Club	2,124
Walpole	Cheshire R. R	217
Warner	Concord & Claremont R. R	422
Warren	Bost., Con. & Mont. R. R	736
Washington, Mount	Guyot	6,288
Do	Appalachian Club	6,285
Do	Bost., Con. & Mont. R. R	6,293
Do.....Nelson's crag	Appalachian Club	5,615
Do.....Lion's Head	Appalachian Club	5,016
Do.....top south wall Huntington's ravine	Appalachian Club	5,432
Do.....Signal Station	U. S. Signal Office	6,286
Do.....Timber line on	Bost., Con. & Mont. R. R	4,150
Waterville	Appalachian Club	1,536
Weetamoo Mountain, Campton	Appalachian Club	2,546
Welch Mountain, lower peak	Appalachian Club	2,657
Do ..... higher peak or "Dicky Mountain"	Appalachian Club	2,783
West Andover	Northern R. R	677
West Campton, Blair's Hotel	Appalachian Club	556
Do.....Sanborn's Hotel	Appalachian Club	571
Do.....post-office	Appalachian Club	623
Do.....Rising Sun Church	Appalachian Club	1,103
West Canaan	Northern R. R	813
West Claremont	Sullivan Co. R. R	406
West Concord	Concord & Claremont R. R	354
West Hopkinton	Contoocook Valley R. R	392
West Lebanon	Northern R. R	376
West Milan	Grand Trunk R. R	996
Westmoreland	Cheshire R. R	512
West Ossipee	P., G. F. & C. R. R	428
Westport	Ashuelot R. R	470
Whiteface	Guyot	4,030
Whitefield	Bost., Con. & Mont. R. R	931
Do....Dodge's Mountain View House (approx.)	Appalachian Club	1,279
Do....Fiske's Cherry Mountain House	Appalachian Club	1,249
White Mountain House	Bost., Con. & Mont. R. R	1,556
Wild Cat Mountain	Guyot	4,350
Willey House Station	Port. & Ogden R. R	1,608
Willey, Mount	Guyot	4,300
Wilton	Petersborough R. R	328
Winchendon Village, crossing Cheshire Railroad	Monadnock & Petersboro R. R	992
Winchester	Ashuelot R. R	448
Windham	Manch. & Lawrence R. R	324
Windsor Railroad Bridge (center)	Sullivan Co. R. R	352
Winnipiseogee Lake	Suncook Valley R. R	500
Do.....Lake survey, October, 1871	P., G. F. & C. R. R	501
Do.....March 26, 1872	P., G. F. & C. R. R	498
Wolfborough Junction, 50 miles from Portsmouth	P., G. F. & C. R. R	574
Woodstock, Isaac Fox's boarding house	Appalachian Club	749
Woodsville	Bost., Con. & Mont R. R	448

NEW JERSEY.

Station.	Authority.	Elevation.
		Feet.
dale	N. Y., L. E. & W. R. R	270
's Pond	N. J. Geol. Survey	897
ɔy, in passenger house on wharf	Camden & A. R. R	12
ver, depot	Sussex R. R	636
ry	N. J. C. R. R	438
ıtic City, Signal Station	U. S. Signal Office	13
ısta	Sussex R. R	489
ıdale	N. Y., L. E. & W. R. R	95
esboro	W. J. R. R	64
ing Ridge	P. & D. R. R	379
on Hill	U. S. C. & G. S	373
ıville	N. Y., L. E. & W. R. R	26
idere	Phil. & T. R. R	271
Do	Newton & Belvidere R. R	286
en Junction	N. Y., L. E. & W. R. R	4
en Neck	U. S. C. & G. S	223
eley Heights	P. & D. R. R	230
ardsville	P. & D. R. R	372
nfield	Newark & Bloomfield R. R	127
msbury	N. J. C. R. R	334
Mountain, summit on State line	N. J. Geol. Survey	1,527
ton	Morris & Essex R. R	413
ton Branch Junction	Morris & Essex R. R	41
ton Crossing Junction	Morris & Essex R. R	554
ton (Sheep's Hill, U. S. C. & G. S. Station)	N. J. Geol. Survey	943
entown, mean tide in Delaware River	Del. & Raritan Canal	1
ıd Brook	N. J. C. R. R	36
chville Hotel	N. J. Geol. Survey	582
's Hill Summit	N. J. C. R. R	365
geton	W. J. R. R	51
dway	Morris & Essex R. R	377
s Island, head of	Phil. & T. R. R	97
Do.....low water in Delaware River	Phil. & T. R. R	74
den, Court-House	U. S. C. & G. S	30
den	W. J. R. R	6
ı May, Signal Station	U. S. Signal Office	27
enterville	Phil. & T. R. R	178
reville	N. Y., L. E. & W. R. R	132
ham	Morris & Essex R. R	233
ter	C. R. R	686
Do. U. S. C. & G. S. Station	N. J. Geol. Survey	790
ter Junction	Morris & Essex R. R	691
ton	M. & G. R. R	123
ıenton, Jaggert's house	U. S. C. & G. S	76
on	N. Y., L. E. & W. R. R	56
ɔn	N. J. C. R. R	349
'ent	Morris & Essex R. R	281
ıstown	U. S. C. & G. S	99
ıer Hill	F. R. R	159
berry Reservoir (water)	Sussex R. R	772
Do (summit)	Sussex R. R	780
e Mountain, U. S. C. & G. S. Station	U. S. C. & G. S	665
'ford	N. J. C. R. R	72
tal Lake	W. J. R. R	2
er's Gap, 1st summit	N. J. Geol. Survey	896
Do.....2d summit	N. J. Geol. Survey	931
Do.....observatory	N. J. Geol. Survey	1,319

Station.	Authority.	Elevation.
		Feet.
Culver's Pond	N. J. Geol. Survey	83
Denville	Morris & Essex R. R	52
Disboro	U. S. C. & G. S	27
Dover	U. S. C. & G. S	57
Drake's Pond	N. J. Geol. Survey	58
Drakesville	Morris & Essex R. R	79
East Freehold	F. & N. Y. R. R	17
East Newark	N. Y., L. E. & W. R. R	3
Easton	N. J. C. R. R	16
Elizabeth	N. J. C. R. R	2
Essex	N. Y., L. E. & W. R. R	12
Finley Station	W. J. R. R	10
Flagtown	N. J. C. R. R	13
Flemington	F. R. R	1
Do..... junction with Bel. & Del. R. R.	F. R. R	7
Do..... Station, track	N. J. C. R. R	19
Do.....crossing		10
Franklin	N. Y., L. E. & W. R. R	3
Franklin Furnace Pond	N. J. Geol. Survey	53
Franklinville	M. & G. R. R	10
Freehold	F. & N. Y. R. R	16
Freehold Junction	F. & N. Y. R. R	3
Frenchtown	Phil. & T. R. R	128
Glassborough	M. & G. R. R	149
Gloucester	W. J. R. R	16
Do....Buena Vista Hotel	U. S. C. & G. S	11
Hackettsown	Morris & Essex R. R	569
Haddonfield	Camden & Amboy R. R	72
Do	U. S. C. & G. S	74
Hanan's Pond	W. J. R. R	87
Hardings	W. J. R. R	140
Hartford, Rodgers house	U. S. C. & G. S	48
Hasteds	W. J. R. R	96
Hawthorne	N. Y., L. E. & W. R. R	50
High Bridge	N. J. C. R. R	335
High Knob	N. J. Geol. Survey	1,799
Do....Pond	N. J. Geol. Survey	1,574
Hightstown	Camden & Amboy R. R	99
Hilladale	F. & N. Y. R. R	143
Hoboken	Morris & Essex R. R	7
Hohokus	N. Y., L. E. & W. R. R	190
Holmdel Cross-Roads	U. S. C. & G. S	135
Hopating Lake	Toner	414
Hope	Newton & Belvidere R. R	451
Hornerstown	U. S. C. & G. S	83
Horton's	C. R. R	695
Howell P. O	Newton & Belvidere R. R	565
Ironia	C. R R	702
Jamesburg	Camden & Amboy R. R	73
Do...Junction	Camden & Amboy R. R	92
Jersey City	N. Y., L. E. & W. R. R	5
Johnsburg	Newton & Belvidere R. R	571
Keyport, Morris house	U. S. C. & G. S	16
Do..Broad street	F. N. & N. Y. R. R	32
Do..First street	F. N. & N. Y. R. R	16
Kingsland	Morris & Essex R. R	24
Kingston (Lock)	Del. & Raritan Canal	57
Do ..intersec. R. H. R. & Old C. & A. Br.	Camden & Amboy R. R	60
Lafayette, grade line in	Sussex R. R	566-571
Lake View	N. Y., L. E. & W. R. R	93
Lambertville	Phil. & T. R. R	75
Do	Del. & Raritan Canal	59
Do.....lock	Del. & Raritan Canal	69
Lebanon	N. J. C. R. R	298

Station.	Authority.	Elevation.
		Feet.
›wn	U. S. C. & G. S	85
·ville	N. J. Geol. Survey	710
Park	Morris & Essex R. R	176
›wartwart Pond	N. J. Geol. Survey	479
ond	N. J. Geol. Survey	862
	W. V. R. R.	419
sville	C. R. R	713
ı	Morris & Essex R. R	247
h	N. Y., L. E. & W. R. R	310
	M. & G. R. R	106
l	N. J. C. R. R	76
's Pond	N. J. Geol. Survey	602
	W. J. R. R	36
:o	F. & N. Y. R. R	156
	W. J. R. R	120
s Creek	Phil. & T. R. R	234
'an	F. & N. Y. R. R	48
....Tuttle's gate	U. S. C. & G. S	55
....bench-mark at	U. S. C & G. S	56
	Phil. & T. R. R	140
n	Morris & Essex R. R	150
ton	P. & D. R. R	279
e	M. & G. R. R	36
Station, bench-mark at	U. S. C. & G. S	6
	W. J. R. R	134
ıir	Newark & Bloomfield R. R	239
sville	F. & N. Y. R. R	116
.....Clarke's house	U. S. C. & G. S	167
.....Frazer's house	U. S. C. & G. S	172
Plains	Morris & Essex R. R	405
Ponds	N. J. Geol. Survey	920
›wn	U. S. C. & G. S	69
	Morris & Essex R. R	328
Airy	F. R. R. R	147
Holly	U. S. C. & G. S	181
.....Garden street	U. S. C. & G. S	41
.....Rhees House	U. S. C. & G. S	38
.....R. R. bridge	U. S. C. & G. S	15
Pisgah Hotel	N. J. G. S	850
	N. J. C. R. R	77
k Highlands Light-house, bench-at	U. S. C. & G. S	208
:c	N. J. C. R. R	94
	N. Y., L. E. & W. R. R	13
d	M. & G. R. R	114
ımpton (Junction)	Warren R. R	508
.....Summit	N. J. C. R. R	513
ırket	N. J. C. R. R	61
	Newton & Belvidere R. R	610
east end of depot	Sussex R. R	607
›ranch	N. J. C. R. R	93
'ineland	M. & G. R. R	107
	Morris & Essex R. R	187
	Warren R. R	491
e	W. J. R. R	116
	N. Y., L. E. & W. R. R	55
n	N. Y., L. E. & W. R. R	89
.Junction	N. Y., L. E. & W. R. R	92
ton	U. S. C. & G. S	42
	U. S. C. & G. S	35
burgh, L. Valley R. R	Phil. & T. R. R	198
'n	W. J. R. R	112
ll	U. S. C. & G. S	202
ld	N. J. C. R. R	145

Station.	Authority.	Elevation.
		Feet.
Port Jervis Depot	N. J. Geol. Survey	441
Port Morris	Morris & Essex R. R	922
Port Murray	Morris & Essex R. R	588
Prallsville	Phil. & T. R. R	86
Princetown, on street-crossing in front of bank	Camden & Amboy R. R	221
Do ....on street-crossing in front of library	Camden & Amboy R. R	207
Princeton Junction	Camden & Amboy R. R	83
Ramsey's	N. Y., L. E. & W. R. R	345
Red Bank, bench-mark at	U. S. C. & G. S	38
Reigelsville	Phil. & T. R. R	166
Ricefield	N. J. C. R. R	109
Ridgewood	N. Y., L. E. & W. R. R	137
Ringoes	F. R. R	248
Rockaway	Morris & Essex R. R	557
Roseville Junction	Newark & Bloomfield R. R	144
Rossell's Freehold	U. S. C. & G. S	166
Rutherford	N. Y., L. E. & W. R. R	50
Do... Park	Morris & Essex R. R	37
Sand Pond	N. J. Geol. Survey	1,500
Sandy Hook, Signal Station	U. S. Signal Office	28
Sarepta	Newton & Belvidere R. R	364
Scotch Plains	N. J. C. R. R	156
Seabright, bench-mark at	U. S. C. & G. S	9
Somerville, bench-mark on court-house grounds	U. S. C. & G. S	82
Do ....bench-mark on base east pillar at court-house	U. S. C. & G. S	91
South Orange	Morris & Essex R. R	141
South Vineland	M. & G. R. R	92
Sparta (upper mill-dam)	N. J. G. S	696
Spotswood	Camden & Amboy R. R	29
Springfield	N. J. C. R. R	312
Do	U. S. C. & G. S	523
Do....United States Coast and Geodetic Survey Station	N. J. Geol. Survey	495
Spruce Run	N. J. C. R. R	471
Stanhope	Morris & Essex R. R	873
Stanley (Passaic River)	Morris & Essex R. R	239
Stewartsville	Morris & Essex R. R	377
Stirling	P. & D. R. R	226
Stony Hill	U. S. C. & G. S	235
Styles	U. S. C. & G. S	34
Succasuna	C. R. R	708
Sunfish Pond	N. J. Geol. Survey	504
Swartwout Hotel	N. J. Geol. Survey	529
Do ....Pond	N. J. Geol. Survey	478
Three Bridges	N. J. C. R. R	114
Trenton, Lock	Del. & Raritan Canal	50
Do..top of dam in Assapink Creek, above Green street bridge	Camden & Amboy R. R	26
Do..Clinton street station		33
Do..Junction	Phil. & T. R. R	63
Tunis, Imlaystown	U. S. C. & G. S.	228
Union	W. J. R. R	143
Valley	N. J. C. R. R	398
Vernon	W. V. R. R	392
Vineland	M. & G. R. R	110
Walkill	N. J. Geol. Survey	383
Washington	Morris & Essex R. R	507
Washington's Crossing	Phil. & T. R. R	67
Waterloo	Morris & Essex R. R	717

Station.	Authority.	Elevation.
		Feet.
sessing	W. & B. R. R	134
.sel (U. S. C. & G. S. station.)	U. S. C. & G. S	583
tfield	N. J. C. R. R	133
t Freehold, Mount's Corner	U. S. C. & G. S	183
t Summit	P. & D. R. R	293
tville	W. J. R. R	10
tehall, depot	Sussex R. R	735
te House	N. J. C. R. R	181
Do	U. S. C. & G. S	64
hatunk	F. & N. Y. R. R	141
dsor	Camden & Amboy R. R	85
dbury	W. J. R. R	34
dward's house	U. S. C. & G. S	188
ghtstown	U. S. C. & G. S	136
lville	Camden & Amboy R. R	53

Station.	Authority.	Elevation.
		Feet.
Abiquiu	Wheeler	5,930
Abiquiu Peak	Wheeler	11,240
Acoma	Wheeler	6,423
Aden	S. P. R. R.	4,393
Afton	S. P. R. R.	4,209
Agua Azul	Wheeler	6,682
Agua Flegra	Wheeler	8,194
Agua Fria	Wheeler	6,486
Aqua Fria Peak	Wheeler	10,965
Aguajes de los Guajolotes	Wheeler	6,202
Agua Negra	Wheeler	8,194
Alameda	Wheeler	4,906
Do	A., T. & S. F. R. R.	4,979
Alamillo	A., T. & S. F. R. R.	4,634
Alamocita	Wheeler	4,256
Alamo Gordo	Wheeler	4,863
Alamosa	Wheeler	5,177
Alamo Station	Wheeler	6,593
Alanuelo	Wheeler	4,693
Albuquerque	Wheeler	4,919
Do	A., T. & S. F. R. R.	4,933
Do	Med. Dept., U. S. A.	5,032
Do	Pac. R. R. Reports	5,026
Alcalde	D. & R. G. R. R	5,687
Aleman	Wheeler	4,594
Algodones	Wheeler	5,104
Do	A., T. & S. F. R. R	5,087
Amargo	D. & R. G. R. R	6,987
Animas Peak	Wheeler	6,106
Annaya Spring	Wheeler	4,717
Antelope Spring	Wheeler	6,221
Anthony	A., T. & S. F. R. R.	3,772
Anton Chico	A., T. & S. F. R. R.	5,386
Do	Pac. R. R. Reports	5,373
Apache	Wheeler	7,324
Apache Cienega	Wheeler	5,291
Apache Tejo	Wheeler	5,478
Arch Spring	Pac. R. R. Reports	6,350
Do	Wheeler	6,485
Arny	A., T. & S. F. R. R.	4,512
Arooyo Cuerbito		4,848
Atlantic & Pacific crossing	A., T. & S. F. R. R.	4,874
Atrisco	Pac. R. R. Reports	5,033
Azotea	D. & R. G. R. R.	7,701
Azul	A., T. & S. F. R. R	6,670
Bacon Spring	Wheeler	7,189
Baldy (Elizabeth) Peak	Wheeler	12,491
Baldy (Santa Fé) Peak	Wheeler	12,661
Banded Peak	Wheeler	12,824
Barney Station		3,992
Barranca	D. & R. G. R. R	6,927
Bascom, Fort	Toner	3,726
Bayard, Fort	Wheeler	6,068
Do astronom. mont	Wheeler	6,098
Bear Peak	Wheeler	8,081
Belen	Wheeler	4,890
Do	A., T. & S. F. R. R	4,784

Station.	Authority.	Elevation.
		Feet.
Cañon Ranch	Toner	4,820
la Spring	Wheeler	7,494
l	A., T. & S. F. R. R	6,056
l Hill	Wheeler	7,029
lillo	Wheeler	5,084
)	A., T. & S. F. R. R	5,031
orn	D. & R. G. R. R	9,000
ente	Toner	5,406
Mountain	Wheeler	8,909
Peak	Wheeler	8,910
Rock Tank	Wheeler	4,180
's Mill	Wheeler	6,449
urg	A., T. & S. F. R. R	6,840
Vater	A. & P. R. R	6,609
Vater Spring	Wheeler	6,778
s Ranch	Wheeler	4,021
Caballo	Wheeler	6,948
nk's Ranch	Wheeler	6,882
in, Camp (old)	Wheeler	7,277
te	D. & R. G. R. R	7,302
ay	S. P. R. R	4,226
on's Ranch	Wheeler	7,133
a Alamosa	Wheeler	6,540
a de los Diegos	Toner	6,145
a Ranch	Wheeler	5,088
Blanco	Pac. R. R. Reports	6,320
Blanco Pass	K. P. R. R. Surveys	7,081
cito	Wheeler	7,023
)	A., T. & S. F. R. R	6,853
del Agua	Wheeler	5,916
del Chaco	Wheeler	5,839
Pajareto	Wheeler	5,099
n Pass	Wheeler	7,398
n Peak	Wheeler	10,023
illo Spring	Mexican Boundary Survey	4,455
)	Wheeler	4,457
o Peak	Wheeler	9,390
o Spring	Wheeler	7,327
olorado	Wheeler	4,679
	Wheeler	6,101
s	A., T. & S. F. R. R	5,667
Blanco	Wheeler	14,269
Colorado	Wheeler	5,654
de Culebra	Wheeler	6,992
Tecolote	Wheeler	7,254
	D. & R. G. R. R	7,841
sal	Wheeler	7,527
ta	D. & S. P. R. R	5,619
Camp	Wheeler	5,374
s	A. & P. R.R	6,969
Spring	Wheeler	6,882
	Wheeler	5,647
nden's Ranch	Wheeler	5,004
dero Ranch	Wheeler	5,825
tta	Wheeler	6,411
Hill	Wheeler	6,474
a Amarilla	Wheeler	7,179
a San Simon	Wheeler	3,855
ron	Wheeler	6,385
illa	Wheeler	6,011
a	Wheeler	6,744
s Rest (above valley 5,922 feet)	Wheeler	9,773
an	A., T. & S. F. R. R	4,356

Station.	Authority.	Elev
Colonas Ferry, Rio Grande	Wheeler	
Colorado Mountain	Wheeler	
Colorado Plaza, Rio Grande	Wheeler	
Comanche	D. & R. G. R. R	
Comanche Cañon Pass	Wheeler	
Cone Peak	Wheeler	
Conrad, Fort	Med. Dept. U. S. A	
Constancia	Wheeler	
Cooke's Spring	Mexican Boundary Survey	
Cook, Mount	Wheeler	
Coolidge	A. & P. R. R	
Copeland's	Wheeler	
Copper Mines	Emory	
Corrales	Wheeler	
Costilla Pass	Wheeler	
Costilla Peak	Hayden	
Do	Wheeler	
Cottonwood Springs	Wheeler	
Covero	Pac. R. R. Reports	
Cow Spring	Wheeler	
Coyote Spring	Wheeler	
Coyote Water-holes	Wheeler	
Craig, Fort	Wheeler	
Do	Med. Dept. U. S. A	
Crocker	A., T. & S. F. R. R	
Cross Spring	Wheeler	
Cubero	A. & P. R. R	
Do	Wheeler	
Cucamonga	Wheeler	
Cuchilla	Wheeler	
Cuchilla Negra	Wheeler	
Cuchillo	Wheeler	
Culebra	Wheeler	
Culebra Peak	Wheeler	
Cummings, Fort	Wheeler	
Do (old)	Wheeler	
Cutler	A., T. & S. F. R. R	
Datili Range, Western Peak	Wheeler	
Davis Ranch	Wheeler	
Deer Spring	Wheeler	
Defiance	A. & P. R. R	
Do. Fort	Wheeler	
Deming, junction with A., T. & S. F. R. R	S. P. R. R	
Diablo Knoll	Wheeler	
Dillon	A., T. & S. F. R. R	
Doña Aña	A., T. & S. F. R. R	
Dorsey	A., T. & S. F. R. R	
Dowlin's Mill	Wheeler	
Dover	A., T. & S. F. R. R	
Dripping Springs	Wheeler	
Dulce	D. & R. G. R. R	
Eagle Point (above valley 3,818 feet)	Wheeler	
East Carrizo Cone	Wheeler	
Elizabeth Peak	Wheeler	
Elizabethtown	Wheeler	
Elk Spring	Wheeler	
El Moro	Wheeler	
Engle	A., T. & S. F. R. R	
El Paso	Mexican Boundary Survey	
Elota	A., T. & S. F. R. R	
El Puerto de la Laguna	Wheeler	
El Rito	Wheeler	
Do	A. & P. R. R	

Station.	Authority.	Elevation.
		Feet.
la	Wheeler	6,029
)	D. & R. G. R. R	5,799
's Ranch	Wheeler	6,080
ıs Peak	Wheeler	8,278
ıa	Wheeler	6,177
ɔla	D. & R. G. R. R	5,568
s	Wheeler	5,320
a	Wheeler	4,746
a Springs	Wheeler	4,239
ll Hill	Wheeler	6,589
anch	Wheeler	4,154
Ferry	Wheeler	4,184
re, Fort	Med. Dept., U. S. A	3,937
a	A., T. & S. F. R. R	4,484
a Pass	P. R. R. Reports	4,600
a Peak	Wheeler	7,295
:istobal, Mount	Wheeler	6,646
ı	A., T. & S. F. R. R	6,525
	S. P. R. R	4,490
ıs Spring	Wheeler	7,673
ɔo	Wheeler	6,117
)	Emory	5,915
as Peak	Wheeler	9,798
as Ranch	Wheeler	6,912
Spring	Wheeler	7,587
)	A. & P. R. R	6,477
Peak	Wheeler	9,920
ɪtown	Wheeler	6,455
Spring	Wheeler	5,400
ta	A., T. & S. F. R. R	7,415
	A., T. & S. F. R. R	4,325
ɣuivira	Wheeler	6,407
ı	A. & P. R. R	6,440
lupita	Wheeler	7,677
awkes	Wheeler	6,700
ta Peak	Wheeler	8,352
er Peak	Wheeler	7,396
	A., T. & S. F. R. R	4,433
ıda Lake	Wheeler	7,149
ick's Peak	Wheeler	7,574
Peak	Wheeler	9,434
ɔrough	Wheeler	5,224
Springs	Wheeler	7,045
ɔrings	Wheeler	5,065
).....Diamond Creek	Wheeler	5,545
).....(13 miles from Magruder's)	Wheeler	5,782
;ane Rock	Wheeler	6,479
ı Agency, near Blazer's Hill	Wheeler	6,449
ı Ranch	Wheeler	5,290
ɔtion Rock	Pac. R. R. Reports	7,238
	A., T. & S. F. R. R	4,881
ɔ..(river bank)	P. R. R. Reports	4,910
ɔ..(top of bluffs)	P. R. R. Reports	5,052
ɔn Ranch	Wheeler	3,738
so Spring	Wheeler	4,783
Mountain	Wheeler	9,534
Peak	Wheeler	8,569
Pueblo	Wheeler	5,479
de Dios		4,820
Lujan Spring	Wheeler	6,011
) Spring	Wheeler	4,540
aan	A. T. & S. F. R. R	6,804
ı Spring	Wheeler	7,226

Station.	Authority.	Elevation.
		Feet.
Kozlowski's Ranch	Wheeler	6,906
La Bajada	Wheeler	5,515
Labato	D. & R. G. R. R	8,281
La Bolsa	Wheeler	5,829
La Chusca	Wheeler	6,703
La Cuesta		5,792
Ladrones Peak	Wheeler	9,214
La Glorietta	Wheeler	7,048
Laguna	A. & P. R. R	5,767
Do	Wheeler	6,266
Laguna del Ojo Hediondo	Wheeler	7,181
Laguna Gallinas	Wheeler	6,393
Laguna Los Griegos	Wheeler	6,656
La Jara Valley	Wheeler	6,988
La Joya	A., T. & S. F. R. R	4,685
Do	Wheeler	5,712
Lake Peak	Wheeler	12,405
La Lacha Spring	Wheeler	4,756
La Laguna de Sal	Wheeler	6,047
La Mesilla		3,935
Do ...Signal Station	U. S. Signal Office	4,124
La Monica Springs	Wheeler	7,735
Lamy	A., T. & S. F. R. R	6,458
Lanark	S. P. R. R	4,167
Lansing	A., T. & S. F. R. R	7,053
La Pilla	Wheeler	5,850
La Placita	Wheeler	5,129
Largo Cañon	A., T. & S. F. R. R	5,651
Las Cruces	Wheeler	3,797
Do	A., T. & S. F. R. R	3,871
Las Lunas	A., T. & S. F. R. R	4,831
Las Lunitas	A., T. & S. F. R. R	4,806
Las Playas		4,190
Las Tapiacitas	Wheeler	8,810
Las Tenejas	Wheeler	4,749
Las Truchas Mountain	Wheeler (Theod.)	13,150
Las Vegas	Med. Dept. U. S. A	6,418
Do	A., T. & S. F. R. R	6,381
Do...Hot Springs	A., T. & S. F. R. R	6,70[illegible]
La Tenajo	Wheeler	4,70[illegible]
Laughlin's Peak	Wheeler	8,9[illegible]
Lava	A., T. & S. F. R. R	4,70[illegible]
Do	D. & R. G. R. R	8,44[illegible]
La Veta	Wheeler	6,26[illegible]
Leidendorf's Wells	Wheeler	6,40[illegible]
Le Jarra		6,94[illegible]
Lepai	S. P. R. R	4,50[illegible]
Levy	A., T. & S. F. R. R	6,23[illegible]
Lisbon	S. P. R. R	4,28[illegible]
Llano	Wheeler	7,45[illegible]
Llano Spring	Wheeler	5,34[illegible]
Loma		7,00[illegible]
Loma Parda		6,39[illegible]
Lomitas Spring	Wheeler	5,73[illegible]
Lone Mountain	Wheeler	5,9[illegible]
Lordsburgh	S. P. R. R	4,2[illegible]
Los Alamos	Wheeler	6,7[illegible]
Los Brazos	Wheeler	7,3[illegible]
Los Cerutos del Aquila	Wheeler	7,9[illegible]
Los Chavez	Wheeler	4,7[illegible]
Los Cornudos		4,3[illegible]
Los Machos	Wheeler	7,2[illegible]
Los Ojos (Rio Chama)	Wheeler	7,2[illegible]
Los Pinos	Wheeler	4,6[illegible]

Station.	Authority.	Elevation.
		Feet.
elites	Wheeler	5,134
sos	Wheeler	7,537
s	Wheeler	7,941
Spring	Wheeler	7,585
	A., T. & S. F. R. R	7,512
Ranch	A., F. & S. F. R. R	1,397
thy's Ranch	A., T. & S. F. R. R	6,099
ty	A. & P. R. R	6,141
r's Ranch	Wheeler	5,086
or Mule Springs	Wheeler	5,261
ght's Ranch	Wheeler	6,237
, Fort	Med. Dept. U. S. A	4,500
	Wheeler	4,395
lena, Mount	Wheeler	10,798
lena Pass	Wheeler	4,755
ler's	Wheeler	5,811
is Spring	Wheeler	4,106
s Spring	Wheeler	4,799
lito	A. & P. R. R	6,232
nares	A., T. & S. F. R. R	6,569
no	Wheeler	6,961
no Peak	Wheeler	10,086
Fort	Med. Dept. U. S. A	6,846
ez Mesa	Wheeler	6,820
s Ranch	Wheeler	4,771
ll	A., T. & S. F. R. R	6,061
ero Agency	Wheeler	6,475
te	A., T. & S. F. R. R	3,815
ito Ranch	Wheeler	6,268
o	Wheeler	6,399
res	Wheeler	4,920
re Forks	Wheeler	7,563
res Mountains	Wheeler	10,061
res Settlement	Wheeler	5,007
Peak	King	7,339
	D. & R. G. R. R	7,256
Spring	Wheeler	7,602
año	Wheeler	6,528
Peak	Wheeler	9,723
Spring	Wheeler	4,336
pring	Wheeler	5,282
prings, 5 miles W. of Macho Springs	Wheeler	5,652
an's	Wheeler	6,912
y's Ranch, Carrizozo Spring	Wheeler	5,300
ento	Wheeler	7,300
ento Peak	Wheeler	10,045
Pueblo	Wheeler	6,045
Spring	Mexican Boundary Survey	4,310
lacer	Wheeler	6,667
ork Mountain	Wheeler	10,594
Head Spring	Wheeler	4,861
a	D. & R. G. R. R	8,183
Peak	Wheeler	9,983
Franklin Peak	Wheeler	7,070
	Wheeler	6,901
Spring	Wheeler	6,934
s Plaza	Wheeler	7,455
	A., T. & S. F. R. R	4,689
ring	Wheeler	5,243
ring Encinoso	Wheeler	7,204
		5,922
Crater	Wheeler	8,903
de las Cuevas	Wheeler	5,902
narillo	Wheeler	6,384

Station.	Authority.	Elevation.
		Feet.
Ojo Caliente	Wheeler	6,292
Ojo Chameleon	Wheeler	6,401
Ojo Datil	Wheeler	7,419
Ojo de Estancia	Wheeler	6,177
Ojo de Inez	Mexican Boundary Survey	5,293
Ojo de Judio	Wheeler	9,289
Ojo de la Casa	Wheeler	6,243
Ojo de la Culebra	Wheeler	5,707
Ojo del Alto Peak	Wheeler	6,930
Ojo de la Parida	Wheeler	4,929
Ojo de la Quinca	Wheeler	5,673
Ojo de las Cañas	Wheeler	5,131
Ojo de la Tunisa	Wheeler	5,673
Ojo del Cibolo	Wheeler	5,640
Ojo del Indio	Wheeler	9,289
Ojo de los Cazos	Wheeler	7,615
Ojo del Oso	Wheeler	7,786
Ojo de los Valles	Wheeler	6,979
Ojo del Perro	Mexican Boundary Survey	4,692
Ojo del Pescado	Pac. R. R. Reports	6,551
Ojo de Nuestra Signora	Wheeler	6,606
Ojo de Vaca	Wheeler	6,864
Ojo de Vaca	Mexican Boundary Survey	4,989
Ojo Galle	Wheeler	7,943
Ojo Milagro	Wheeler	5,173
Ojos Calientes	Wheeler	5,594
Onava	A., T. & S. F. R. R	6,728
Ord Peak	Wheeler	10,094
Organ Mountain	Wheeler (Theod.)	9,108
Organ Mountain Pass	P. R. R. Reports	5,467
Ortiz	A., T. & S. F. R. R	5,819
Oscura Water Holes	Wheeler	5,461
Osha Peak	Wheeler	10,023
Oteio	A., T. & S. F.R. R	6,377
Pajarida		4,833
Palmillo	D. & R. G. R. R	8,236
Palomas	Wheeler	4,127
Paraje	Wheeler	4,319
Paria Spring	Wheeler	6,696
Parida	Wheeler	4,627
Pastora	Hayden	9,332
Patero	Wheeler	6,123
Patterson's Ranch	Wheeler	4,590
Payanda	Toner	4,833
Pecos Village	Emory	6,366
Pedernal	Wheeler	7,140
Pedernal Pass	Wheeler	7,181
Pedernal Peak	Wheeler	7,580
Pedernal Water Hole	Wheeler	7,140
Pelado Peak	Wheeler	11,260
Peloncillo Pass	T. & P. R. R. Surveys	4,446
Peña Blanca	Wheeler	5,170
Peñasco	Wheeler	7,452
Peralta	Wheeler	4,661
Pescado Spring	Wheeler	6,546
Picacho Crossing	Wheeler	3,784
Picacho de Sabinal	Wheeler	4,676
Picacho Peak	Wheeler	4,825
Picuris Pueblo	Wheeler	7,108
Pinos Altos	Wheeler	6,845
Pinos Altos Peak	Wheeler	8,128
Pintado Pueblo	Wheeler	6,506
Placer Mountain	Wheeler	8,827
Plaza de Alcalde	Wheeler	5,756

Station.	Authority.	Elevation.
		Feet.
Plaza Mangos	Wheeler	7,319
Point of Rocks	Wheeler	4,268
Pojoaque	Wheeler	5,750
Polvadero Peak	Wheeler	7,324
Ponil Pass	Wheeler	9,848
Pope	A., T. & S. F. R. R	4,557
Posos del Pino	Wheeler	6,055
Pueblo Colorado	Wheeler	6,368
Pueblo Springs	Wheeler	6,363
Safford P. O	Wheeler	2,712
Puercito	Wheeler	6,847
Puertocito	Wheeler	6,428
Puertocito Spring	Wheeler	6,499
Punta del Agua	Wheeler	6,599
Pyramid	S. P. R. R	4,303
Pyramid Hill	Wheeler	6,628
Queletes		5,193
Ralston	Wheeler	4,488
Rancheria Viega	Wheeler	7,300
Ranchos de Taos	Wheeler	6,983
Randall	A., T. & S. F. R. R	3,947
Raton	A., T. & S. F. R. R	6,620
Rattlesnake Hill	Wheeler	6,617
Rayado		6,946
Real Dolores	Wheeler	6,802
Recas	A., T. & S. F. R. R	7,049
Remances	Toner	6,185
Rincon	A., T. & S. F. R. R	4,014
Rinconada	Wheeler	5,829
Rio Puerco	A. & P. R. R	5,026
Rito Mangos	Wheeler	7,319
Rito Quemado	Wheeler	6,827
Roblado Peak	Wheeler	5,575
Rock Ranch	Wheeler	5,844
Romero	A., T. & S. F. R. R	6,286
Rock Spring	Wheeler	6,849
Rogers	S. P. R. R	3,730
Rosario	A., T. & S. F. R. R	5,400
Sabinal	A., T. & S. F. R. R	4,741
Do	Wheeler	5,087
Sabinal Agency	Wheeler	4,757
Salado	Wheeler	6,321
Salinas Peak	Wheeler	9,040
San Antonio	A., T. & S. F. R. R	4,517
Do	Pacific R. R. Reports	6,409
Do	Wheeler	5,625
San Antonio Peak	Wheeler	10,912
Do	Hayden	10,833
San Antonio Valley	Wheeler	8,367
San Augustine	Wheeler	6,002
San Augustine Pass	Wheeler	5,654
San Augustine Plain	Wheeler	6,780
Sanchez Ranch	Wheeler	7,298
Sandia Mountains, summit of	Wheeler	10,609
San Domingo		5,190
San Felipe	Wheeler	5,007
San Francisco (upper) plaza	Wheeler	5,688
Do (middle) plaza	Wheeler	5,638
Do (lower) plaza	Wheeler	5,639
San Francisco, on Rio Puerco	Wheeler	5,444
San Geronimo	Wheeler	6,724
San Ignacio	Wheeler	5,515
San Ildefonso	Wheeler	5,457
San Isidro	Wheeler	5,460

Station.	Authority.	Elevation.
		Feet.
San José	A. & P. R. R	5,428
Do	Wheeler	5,648
San Juan	Wheeler	5,601
Do...Pueblo	Wheeler	5,554
San Lorenzo	Wheeler	6,107
San Lorenzo Spring	Wheeler	5,326
San Luis Rey	Wheeler	5,152
San Marcial	A., T. & S. F. R. R	4,437
Do	Wheeler	4,385
San Marcos Spring	Wheeler	6,056
San Mateo	Wheeler	7,323
San Mateo Mountain	Wheeler	10,209
San Miguel	A., T. & S. F. R. R	6,019
Sands	A., T. & S. F. R. R	6,386
San Nicolas Spring	Wheeler	4,21[illegible]
San Pedro	Wheeler	4,48[illegible]
San Rafael	Wheeler	6,50[illegible]
Santa Aña	Wheeler	5,34[illegible]
Santa Clara		6,51[illegible]
Santa Clara Mountain	Wheeler (Theod.)	11,50[illegible]
Santa Cruz	Wheeler	5,59[illegible]
Santa Fé	Wheeler	7,04[illegible]
Do	A., T. & S. F. R. R.	6,9[illegible]
Do..Signal Station	U. S. Signal Office	6,8[illegible]
Santa Fé Baldy Peak	Wheeler	12,6[illegible]
Santa Rita	Wheeler	6,1[illegible]
Santa Rita Copper Mines	Wheeler	6,1[illegible]
Santa Rita del Cobre	Mexican Boundary	6,1[illegible]
Santo Domingo	Wheeler	5,[illegible]
Santo Niño del Rincon	Wheeler	7,[illegible]
Sapello	Wheeler	6,[illegible]
Sayer's Bench	Wheeler	6,[illegible]
Sayer's Ranch	Wheeler	6,[illegible]
Selden, Fort	Wheeler	3,[illegible]
Do	A., T. & S. F. R. R	3,[illegible]
Sellers	A., T. & S. F. R. R	4,[illegible]
Servilleta	Wheeler	6,[illegible]
Do	D. & R. G. R. R	7,[illegible]
Shedd's Ranch, San Augustin	Wheeler	4,[illegible]
Sheep Springs	Toner	5,[illegible]
Sherman, Camp (old)	Wheeler	6,[illegible]
Shoemaker	A., T. & S. F. R. R	6,[illegible]
Silla	A., T. & S. F. R. R	6,[illegible]
Silver City	A., T. & S. F. R. R	5,[illegible]
Do....Signal Station	U. S. Signal Office	5,[illegible]
Silver Springs	Wheeler	7,[illegible]
Slocum	Wheeler	4,[illegible]
Socorro	A., T. & S. F. R. R	4,[illegible]
Do	Wheeler	4,[illegible]
Do	Med. Dept., U. S. A	4,[illegible]
Do..Signal Station	U. S. Signal Office	4,[illegible]
Socorro Ford	Wheeler	4,[illegible]
Socorro Peak	Wheeler	7,[illegible]
South Florida Peak	Wheeler	7,[illegible]
South Oscura Mountain	Wheeler	8,[illegible]
South Sandia Peak	Wheeler	8,[illegible]
Springer	A., T. & S. F. R. R	5,[illegible]
Stanton, Fort (flagstaff)	Wheeler	6,[illegible]
Stinking Springs	Wheeler	6,[illegible]
Stone Ranch, on Canadian River	Wheeler	5,[illegible]
Strauss	S. P. R. R	4,[illegible]
Sublette	D. & R. G. R. R	9,[illegible]
Sulzbacher	A., T. & S. F. R. R	5,[illegible]
Suna	A. & P. R. R	5,[illegible]

Station.	Authority.	Elevation.
		Feet.
Sunday Peak	Wheeler	6,030
Sweetwater Spring	Wheeler	6,343
Tanques de Canoñcito	Wheeler	5,083
Tanques de las Animas	Wheeler	6,404
Taos	Wheeler	6,983
Taos Pass	Wheeler	9,282
Taos Peak	Wheeler	13,145
Taos Plaza	Wheeler	6,949
Tapiacitas	Wheeler	8,870
Taylor, Mount	Wheeler	11,391
Taylor's Ranch	Wheeler	7,226
Tecoloto	Wheeler	6,668
Tesuque	A., T. & S. F. R. R	5,844
Tetilla Peak	Wheeler	7,060
Thomas, Mount	Wheeler	11,275
Thompson's Spring	Wheeler	7,607
Thorn, Fort	Med. Dept. U. S. A	4,500
Thunder Peak	Wheeler	9,122
Tierra Amarilla	Wheeler	7,466
Tijeras	Wheeler	6,214
Tipton	A., T. & S. F. R. R	6,363
Toas Kete	Wheeler	6,506
Toltec	A. & P. R. R	9,443
Tomasceños Water Holes	Wheeler	5,502
Tomè	Wheeler	4,879
Torreon Springs	Wheeler	5,980
Tounce	A., T. & S. F. R. R	3,975
Toussaints Ranch	Wheeler	4,634
Tres Cerros Spring	Wheeler	6,128
Tres Hermanos Peak	Wheeler	7,151
Tres Piedras	D. & R. G. R. R	8,066
Trinidad		5,725
Triplets	Wheeler	4,347
Truchas	Wheeler	7,622
Truchas Peak	Wheeler	13,150
Tularosa	Wheeler	4,344
Tulerosa, Fort (old)	Wheeler	6,740
Tule Spring	Wheeler	5,925
Tunica Mesa	Wheeler	5,510
Tunis	S. P. R. R	4,424
Union, Fort	Wheeler	6,711
Do	Med. Dept. U. S. A	6,670
United States Mountain	Med. Dept. U. S. A	10,734
Upham	A., T. & S. F. R. R	4,537
Upper Abo Pass	Wheeler	6,431
Ute Peak	Wheeler	10,151
Valencia	Wheeler	4,980
Valverde	A., T. & S. F. R. R	4,469
Van Brummer	Wheeler	8,557
Vegas Village	Emory	6,418
Venado Spring	Wheeler	5,982
Vermejo	Wheeler	7,823
Vernal Springs	Emory	6,299
Vincent, Camp	Wheeler	6,188
Volcano	D. & R. G. R. R	8,465
Volunteer Spring	Wheeler	7,106
Wagon Mound	A., T. & S. F. R. R	6,176
Waldo	A., T. & S. F. R. R	5,604
Wallace	A., T. & S. F. R. R	5,246
Warm Springs	Wheeler	5,008
Watrous	A., T. & S. F. R. R	6,396
Watson	A., T. & S. F. R. R	4,493
Webster, Fort	Med. Dept. U. S. A	6,350
West Gallinas Mountain	Wheeler	8,464

Station.	Authority.	Elevation.
		Feet.
West Jicarilla Cone	Wheeler	7,727
Whetstone	Toner	6,360
White Oak Spring	Wheeler	6,618
White Sands	Wheeler	3,888
Willow Creek	D. & R. G. R. R	7,720
Willow Spring	Wheeler	6,677
Wilna	S. P. R. R	4,559
Wingate	A. & P. R. R	6,714
Wingate, Fort	Wheeler	7,038
Do.....Sun Dial	U. S. Geol. Survey (levels)	6,997
Winter Spring	Wheeler	7,182
Winter's Ranch, Jicarilla Mountains	Wheeler	6,582
Yucca, Camp	Wheeler	4,374
Zandia	Toner	5,056
Zuni	Toner	6,355
Do	S. P. R. R	4,189
Do. old		7,414
Zuni Pass	K. P. R. R. Surveys	7,926

NEW YORK.

Station.	Authority.	Elevation.
		Feet.
Acra (Catskills)	Appal. Club	546
Adams	R., W. & O. R. R	599
Do. Centre	R., W. & O. R. R	619
Adamsville	A. & S. R. R	212
Addison	N. Y., L. E. & W. R. R	993
Adrian	N. Y., L. E. & W. R. R	1,112
Afton	A. & S. R. R	979
Akron	N. Y. C. & H. R. R. R	765
Albany	N. Y. C. & H. R. R. R	30
Do	A. & S. R. R	16
Do. Water Table	N. Y. C. & H. R. R. R	32
Do. Signal Station	U. S. Signal Office	75
Do. M. T. Hudson River	U. S. C. & G. S	6
Albion	N. Y., C. & H. R. R	547
Do. Geodetic Station	U. S. Lake Survey	711
Alden	N. Y., L. E. & W. R. R	864
Alexander	N. Y., L. E. & W. R. R	938
Alfred	N. Y., L. E. & W. R. R	1,660
Allegany	N. Y., L. E. & W. R. R	1,422
Allis, Geodetic Station	N. Y. State Survey	503
Almond	N. Y., L. E. & W. R. R	1,410
Amawalk	N. Y. & N. R. R	384
Amboy Station	N. Y. State Survey	793
Amherst, Geodetic Station	U. S. Lake Survey	260
Ampersand Pond	Geol. Survey of N. Y	2,079
Amsterdam	N. Y. C. & H. R. R. R	279
Ancram Lead Mines	P. H. & B. R. R	570
Andover	N. Y., L. E. & W. R. R	1,640
Andrew Mountain	Adirondack Survey	3,216
Angelic	R. N. & P. R. R	1,455
Angola	L. S. & M. S. R. R	687
Antrim	C., C. & A. R. R	1,672
Apersand Mountain	Adirondack Survey	3,433
Apulia	S. & B. R. R	1,227
Arcade	B., N. Y. & P. R. R	1,457
Arkport	N. Y. L. E. & W. R. R	1,199
Arkville	U. & D. R. R	1,342
Ashford	N. Y. & N. R. R	139
Ashland Centre P. O. (Catskills)	Appal. Club	1,435
Ashland Pinnacle (Catskills)	Appal. Club	3,420
Atteban	M., D. & C. R. R	451
Attica	N. Y., L. E. & W. R. R	998
Attica Summit	N. Y., L. E. & W. R. R	1,086
Atwater	G., I. & S. R. R	394
Auburn	N. Y. C. & H. R. R. R	674
Do	Southern Cent. R. R	666
Do	I., A. & W. R. R	639
Do. City datum	City Engineer	673
Aurora	B., N. Y. & P. R. R	925
Au Sable Pond	Geol. Survey of N. Y	2,065
Authorsburg	N., D. & C. R. R	337
Avalanche Lake (Adirondacks)	Adirondack Survey	2,846
Do	Geol. Survey of N. Y	2,856
Avoca	N. Y., L. E. & W. R. R	1,198
Avon	N. Y., L. E. & W. R. R	585
Bainbridge	A. & S. R. R	994
Baldface Mountain	Adirondack Survey	3,904

Station.	Authority.	Elevation.
		Feet.
Bald Mountain	Adirondack Survey	2,302
Bald Peak (Adirondacks)	Adirondack Survey	2,084
Do	Geol. Survey of N. Y	2,065
Do... (Moriah)	Adirondack Survey	2,120
Baldwin Place	N. Y. & N. R. R	621
Baldwinsville	O. & S. R. R	390
Ballston	R. & S. R. R	310
Balm of Gilead Mountain	Adirondack Survey	1,953
Balsam Mountain north end (Catskills)	Appal. Club	3,571
Do.....south end (Catskills)	Appal. Club	3,601
Barlow Hill (Catskills)	Appal. Club	2,651
Bartlett	Rome & C. R. R	558
Bartlett Mountain	Adirondack Survey	3,715
Barton	N. Y., L. E. & W. R. R	803
Barto Geodetic Station	N. Y. State Survey	1,652
Basin Mountain	Adirondack Survey	4,906
Basket	N. Y., L. E. & W. R. R	830
Batavia	N. Y. C. & H. R. R. R	895
Do. Geodetic Station	U. S. Lake Survey	761
Bath	N. Y., L. E. & W. R. R	1,105
Beach, Lake	Geol. Survey of N. Y	1,914
Bear-pen Mountain, approx	Appal. Club	3,545
Beaver Dam	N. Y., L. E. & W. R. R	405
Beaver Dams	S. G. & C. R. R	1,279
Beaver Lake	Toner	1,409
Beaver Meadow Pond	Geol. Survey of N. Y	2,194
Bedford	N. Y. & H. R. R	291
Beech Ridge Gap	Appal. Club	3,096
Bee Line Mountain, approx	Appal. Club	3,300
Belle Ayr Mountain	Appal. Club	3,394
Bellona	N. C. R. R	863
Belvedere	N. Y., L. E. & W. R. R	1,384
Bennet Notch	Appal. Club	1,994
Bennett's Pond	Geol. Survey of N. Y	1,985
Bergen	N. Y. C. & H. R. R. R	609
Berkshire	S. C. R. R	1,045
Bessemers	U., I. & E. R. R	949
Best Hill	Appal. Club	2,649
Bethel	U., D. & C. R. R	505
Big Flats	N. Y., L. E. & W. R. R	915
Big Indian	U. & D. R. R	1,213
Big Island	N. Y., L. E. & W. R. R	393
Big Westkill Mountain	Appal. Club	3,896
Billings	U., D. & C. R. R	391
Binghams	G., I. & S. R. R	894
Binghamton	N. Y., L. E. & W. R	868
Do	Del., L. & W. R. R	846
Do	A. & S. R. R	859
Do .....N. Y. & Erie Junction	S. & B. R. R	853
Bingley	C., C. & D. R. R. R	1,041
Binnewater	W. V. R. R	219
Birch Kill Notch	Appal. Club	2,334
Birds and Worms	R. & L. O. R. R	399
Black Dome	Appal. Club	4,003
Black Head	Appal. Club	3,945
Black River	U. & B. R. R. R	575
Black Rock	N. Y. C. & H. R. R. R	595
Blanteville	N. Y., L. E. & W. R. R	167
Blodgett Mills	S. & B. R. R	1,086
Bloods	N. Y., L. E. & W. R. R	1,325
Blossburg	C., C. & A. R. R	1,348
Blue Mountain	Adirondack Survey	3,825
Blue Mountain Lake	Geol. Survey of N. Y	1,822

Station.	Authority.	Elevation.
		Feet.
Bog Lake	Geol. Survey of N. Y	1,755
Boiceville	U. & D. R. R	604
Booneville	U. & B. R. R. R	1,135
Boreas Mountain	Geol. Survey of N. Y	3,726
Boston Corner	P., H. & B. R	738
Bouchon	N. Y., L. E. & W. R. R	852
Breesport	U., I. & E. R. R	1,097
Brewerton	R., W. & O. R	384
Brewster	N. Y. & N. R. R	406
Do	N. Y. & H. R. R	414
Bridgewater	U. C. & S. R. R	1,188
Brier Hill	U. & B. R. R	276
Brinckerhoff	U., D. C. R. R	223
Brockport	N. Y. C. & H. R. R	546
Do...Geodetic Station	U. S. Lake Survey	731
Brocton	L., S. & M. S. R. R	689
Brodhead's Bridge	U. & D. R. R	504
Broome Centre, hotel	Appal. Club	1,973
Brown's Station	U. & D. R. R	530
Bucktooth	A. & G. W. R. R	1,376
Buffalo	N. Y., L. E. & W. R. R	588
Do...Exchange street	N. Y. C. & H. R. R. R	584
Do...City Hall (ground), Geodetic Station	U. S. Lake Survey	609
Do...Main street	N. Y., L. E. & W. R. R	630
Do...Signal Station	U. S. Signal Office	664
Buffalo Plains, Geodetic Station	U. S. Lake Survey	685
Bulger, Geodetic Station	N. Y. State Survey	833
Bulwagga Mountain	Geol. Survey of N. Y	1,260
Burns	N. Y., L. E. & W. R. R	1,203
Burnt Mountain (Adirondacks)	Adirondack Survey	2,085
Do (Catskills)	Appal. Club	3,170
Byron	N. Y. C. & H. R. R. R	695
Cade Mountain (Catskills)	Appal. Club	2,390
Cadyville	Chat. R. R	732
Cairo (Catskills)	Appal. Club	346
Caledonia	N. Y. C. & H. R. R. R	658
Do	N. Y., L. E. & W. R. R	667
Callicoon	N. Y., L. E. & W. R. R	781
Camden	R. W. & O. R. R	520
Camel's Hump	Adirondack Survey	3,548
Cameron	N. Y., L. E. & W. R. R	1,056
Cameron Mills	N. Y., L. E. & W. R. R	1,029
Campbell	N. Y., L. E. & W. R. R	1,014
Campbell Hall	N. Y., L. E. & W. R. R	396
Campville	N. Y., L. E. & W. R. R	830
Canaan	Boston & Albany R. R	869
Canandaigua	N. C. R. R	740
Canaseraga	N. Y. C. & H. R. R. R	418
Canastota	N. Y., W. S. & B. R. R	426
Candor	C. & L. R. R	822
Canisteo	N. Y., L. E. & W. R. R	1,134
Cape Vincent	R. W. & O. R. R	253
Carmel	N. Y. C. & N. R. R	519
Caroline	C. & S. R. R	968
Carpenter, Geodetic Station	N. Y. State Survey	1,105
Carrollton	N. Y., L. E. & W. R. R	1,399
Carthage	U. & B. R. R. R	740
Cascade	S. C. R. R	724
Cassadaga, surface of water	D., A. V. & P. R. R	1,309
Cassville	U. C. & S. R. R	1,215
Do..Junction	U. C. & S. R. R	1,179
Castile	N. Y., L. E. & W. R. R	1,401
Do..summit	N. Y., L. E. & W. R. R	1,431

Station.	Authority.	Elevation.
		Feet.
Castleton	U. S. C. & G. S	19
Do..Boulder, corner Medder and River streets	U. S. C. & G. S	21
Castor Land	U. & B. R. R. R	745
Cato	S. C. R. R	423
Catskill Lakes	Appal. Club	2,140
Catskill Mountain House	Appal. Club	2,225
Cattaraugus	N. Y., L. E. & W. R. R	1,411
Cayuga	N. Y. C. & H. R. R. R	388
Do..Lake, 1878	G. I. & S. R. R	383
Cazenovia	C., C. & D. R. R. R	1,176
Do	S. & C. V. R. R	1,191
Do....Lake	Toner	900
Cedar Lake	Geol. Survey of N. Y	2,530
Do	Adirondack Survey	2,493
Cedar River Settlement	Adirondack Survey	1,670
Central Valley	N. Y., L. E. & W. R. R	476
Centre	N. Y. C. & H. R. R. R	324
Centreville	A. & S. R. R	964
Chain Ponds	Adirondack Survey	1,707
Champlain Lake	Adirondack Survey	91
Do	R. R. Reports	101
Chapp, Geodetic Station	N. Y. State Survey	1,280
Charley Pond	Adirondack Survey	1,687
Charlotte	N. Y. C. & H. R. R. R	255
Charlotte Junction	N. Y. C. & H. R. R. R	523
Chatauqua Lake	Toner	1,291
Chatham	Boston & Albany R. R	462
Chatham Center	Boston & Albany R. R	315
Chaumont	R., W. & O. R. R	294
Cheektowaga	N. Y., L. E. & W. R. R	661
Chemung	N. Y., L. E. & W. R. R	817
Chemung Junction	U., I. & E. R. R	902
Chenango Forks	U., C. & S. R. R	901
Cherry Valley	U. & S. R. R	1,321
Chester	N. Y., L. E. & W. R. R	459
Chestnut Ridge, Geodetic Station	N. Y. State Survey	498
Chicago	U., I. & E. R. R	1,169
Chittenango	N. Y. C. & H. R. R. R	417
Chittenango Falls	C., C. & De R. R. R	1,051
Churchville	N. Y. C. & H. R. R. R	570
Clarence Centre	N. Y. C. & H. R. R. R	643
Clark's Mills	Rome & C. R. R	528
Clayton	U. & B. R. R. R	232
Clear Lake	Geol. Survey of N. Y	2,006
Clear Pond	Adirondack Survey	1,655
Cleveland	N. Y. & O. R. R	418
Clinton	Rome & C. R. R	583
Clinton Corners	P., H. & B. R. R	288
Clockville	C., C. & De R. R. R	637
Clove Branch Junction	N., D. & C. R. R	289
Clum Hill (Catskills)	Appal. Club	2,372
Clyde	N. Y. C. & H. R. R. R	396
Do..Geodetic Station	U. S. Lake Survey	642
Clyde, Geodetic Station	N. Y. State Survey	633
Clymer	B. C. & P. R. R	1,146
Cobble Hill	Adirondack Survey	1,936
Cobleskill	A. & S. R. R	903
Cochecton	N. Y., L. E. & W. R. R	748
Coffins	N. D. & C. R. R	659
Colden, Lake	Adirondack Survey	2,748
Do	Guyot	2,785
Colden Mountain	Adirondack Survey	4,70[illegible]
Collamer, Geodetic Station	N. Y. State Survey	485

Station.	Authority.	Elevation.
		Feet.
Collins	A. & S. R. R	1,118
Colonel's Chair, highest (Catskill's)	Appal. Club	3,165
Columbus Summit	N. Y., K. & S. R. R	1,553
Colvin, Lake	Geol. Survey of N. Y	1,991
Do	Adirondack Survey	4,142
Conesus	N. Y., L. E. & W. R. R	1,280
Conewango Creek	B. & S. W. R. R	1,270
Conklin	Del., L. & W. R. R	852
Conneaut, Geodetic Station	U. S. Lake Survey	882
Cooksburg (Catskill)	Appal. Club	756
Coopers	N. Y., L. E. & W. R. R	970
Corbettsville	Del., L. & W. R. R	855
Corfu	N. Y., C. & H. R. R. R	863
Cornell Mountain (Catskills)	Appal. Club	3,681
Corning	N. Y., L. E. & W. R. R	942
Cornwall	N. Y., L. E. & W. R. R	280
Cornwallville (Catskills)	Appal. Club	950
Cortland	U., I. & E. R. R	1,116
Cossitt, Geodetic Station	N. Y. State Survey	1,020
Covert	G. I. & S. R. R	853
Crafts	N. Y. C. & N. R. R	482
Craigville	N. Y., L. E. & W. R. R	455
Crain's Mills	C. C. & De R. R. R	1,172
Crain's Mountain	Adirondack Survey	3,253
Do	Adirondack Survey	3,289
Cranberry Creek	F. J. & G. R. R	759
Cranberry Lake	Toner	1,570
Crane's Village	N. Y. C. & H. R. R. R	270
Cranson, Geodetic Station	N. Y. State Survey	1,321
Crittenden	N. Y. C. & H. R. R. R	848
Crooked Lake	Geol. Survey of N. Y	2,022
Croton Falls	N. Y. & H. R. R	356
Croton Lake	N. Y., B. & M. R. R	167
Crystal Lake	Geol. Survey of N. Y	1,663
Cuba	N. Y., L. E. & W. R. R	1,542
Cuba Summit	N. Y., L. E. & W. R. R	1,698
Canastota, Geodetic Station	N. Y. State Survey	588
Curtis	N. Y., L. E. & W. R. R	997
Cuyler	C. C. & De R. R. R	1,225
Cuylerville	N. Y., L. E. & W. R. R	528
Dale	N. Y., L. E. & W. R. R.	1,190
Dannemora	Chat. R. R	1,356
Dansville	N. Y., L. E. & W. R. R	691
Darien	N. Y., L. E. & W. R. R	1,024
Davison, Geodetic Station	N. Y. State Survey	631
Dayton	N. Y., L. E. & W. R. R	1,346
Deep Hollow Mountain (Catskills)	Appal. Club	3,500
Deer Park Summit	N. Y., L. E. & W. R. R	901
Delong Mountain (Catskills)	Appal. Club	2,540
Delphi	C. C. & De R. R. R	1,309
Deposit	N. Y., L. E. & W. R. R	1,009
Devereux, Geodetic Station	N. Y. State Survey	832
De Ruyter	C. C. & De R. R. R	1,276
Devil's Ear Mountain	Adirondack Survey	3,904
Dewitt	N. Y. C. & H. R. R. R.	417
Do..Centre	S. & C. V. R. R	410
Dickinson	N. Y., L. E. & W. R. R	954
Discovery Mountain	Adirondack Survey	1,583
Do ....little	Adirondack Survey	1,376
Dix's Peak	Adirondack Survey	4,916
Do	Geol. Survey of N. Y	5,200
Dobb's Ferry	U. S. C. & G. S	12
Dolbey's	S. & C. V. R. R	408
Doubletop (Catskills)	Appal. Club	3,875

Station.	Authority.	Elevat
		1
Draper Geodetic Station	N. Y. State Survey	
Dresden Station	S., G. & C. R. R	
Dryden	S. C. R. R	1,
Dryden Lake, surface water	S. C. R. R	1,
Duanesburg	A. & S. R. R	
Duck Island, Geodetic Station	U. S. Lake Survey	
Dundee	S., G. & C. R. R	
Dunkirk, Union Depot	L. S. & M. S. R. R	
Do...A. V. and P. R. R. crossing	B. & S. W. R. R	1,
Durham Centre (Catskills)	Appal. Club	
Dutchess Junction	N., D. & C. R. R	
Eagle Mountain (Catskills)	N., D. & C. R. R	3,
Eagle, Geodetic Station	N. Y. State Survey	1,
Eagle Summit	R. & St. L. R. R	1,
Earlville	U., C. & S. V. R. R	1,
Do	S. & C. V. R. R	1,
East Albany	N. Y. C. & H. R. R. R	
East Bloomfield	N. Y. C. & H. R. R. R	
East Buffalo	N. Y., L. E. & W. R. R	
East Chatham	Boston & Albany R. R	
East Clarion	N. Y., R. & P. R. R	1,
East Creek	N. Y. C. & H. R. R. R	
East Tarrytown	N. Y. C. & N. R. R	
East Hill, Geodetic Station	N. Y. State Survey	2,
East Homer	C., C. & De R. R. R	1,
East Jewett (Catskills)	Appal. Club	3,
East Kill Mountain (Catskills)	Appal. Club	3,
East Pembroke	N. Y. C. & H. R. R. R	
East River	C., C. & De R. R. R	1,
East Sing Sing	N. Y. C. & N. R. R	
East Waverly	G., I. & S. R. R	
Eaton, Geodetic Station	N. Y. State Survey	1,
Eaton	N. Y. & O. R. R	1,
Ebenezer	B., N. Y. & P. R. R	
Eckford Lake	Toner	1,
Eden	B. & S. W. R. R	
Edwards	Boston & Albany R. R	
Elk Lake	Geol. Survey of N. Y	2,
Elkland	Corning, C. & A. R. R	1,
Ellicottville	R. & S. L. R. R	1,
Do .....water surface, Great Valley Creek	R. & S. L. R. R	1,
Elma	B., N. Y. & P. R. R	
Elmira	N. Y., L. E. & W. R. R	
Emmons	A. & S. R. R	1,
Do..Mount	Geol. Survey of N. Y	1,
Do	Adirondack Survey	3,
Ephrata, Geodetic Station	N. Y. State Survey	1,
Erie, Lake, water surface	U. S. Lake Survey	
Erieville	S. & C. V. R. R	1,
Erin	U., I. & E. R. R	1,
Erwin Centre	Corning, C. & A. R. R	
Erwin's	N. Y., L. E. & W. R. R	
Erwin's Mill	N. Y., L. E. & W. R. R	1,
Esperance	A. & S. R. R	
Etna	U., I. & E. R. R	1,
Evergreen Mountain, approx. (Catskills)	Appal. Club	3,
Fabius, Geodetic Station	N. Y. State Survey	2,
Failing, Geodetic Station	N. Y. State Survey	
Fairfield Academy, R. R. bench at laboratory, Geodetic Station	N. Y. State Survey	1,
Fair Ground	N. Y., L. E. & W. R. R	
Fairmount, Geodetic Station	N. Y. State Survey	

Station.	Authority.	Elevation.
		Feet.
Fairport	N. Y. C. & H. R. R. R	456
Falconer	D., A. V. & P. R. R	1,258
Falkirk, Geodetic Station	U. S. Lake Survey	843
Fall Brook	Corning, C. & A. R. R	1,842
Farmer	G., I. & S. R. R	860
Farnham	L. S. & M. S. R. R	623
Fayetteville	S. & C. V. R. R	538
Felt's Mills	U. & B. R. R. R	620
Fenner, Geodetic Station	N. Y. State Survey	1,862
Fentonville	D., A. V. & P. R. R	1,243
Fishkill	N., D. & C. R. R	213
Flemingville	S. C. R. R	907
Florida	N. Y., L. E. & W. R. R	404
Fonda	N. Y. C. & H. R. R. R	299
Forestville	N. Y., L. E. & W. R. R	883
Forked Lake	Toner	1,704
Fort Edward	R. & S. R. R	141
Fort Plain	N. Y. C. & H. R. R. R	311
Fort Stanwix	U. S. C. & G. S	9
Fox Hollow	U. & D. R. R	1,004
Frankfort	N. Y. C. & H. R. R. R	402
Franklin Summit	N. Y. & O. R. R	1,764
Franklinton (Catskills)	Appal. Club	1,260
Franklinville	B., N. Y. & P. R. R	1,593
Fredonia	D., A. V. & P. R. R	765
Freeville, U., I. & E. R. R. crossing	S. C. R. R	1,049
Frewsburg	D., A. V. & P. R. R	1,261
Friendship	N. Y., L. E. & W. R. R	1,539
Fulton	O. & S. R. R	387
Fultonham Church (Catskills)	Appal. Club	714
Gainsville	N. Y., L. E. & W. R. R	1,407
Gainsville Summit	R. & S. L. R. R	1,636
Gardiner	W. V. R. R	311
Garwood's	N. Y., L. E. & W. R. R	1,283
Gasport	N. Y. C. & H. R. R. R	525
Do. Geodetic Station	U. S. Lake Survey	648
Gaymard's	N. Y., L. E. & W. R. R	784
Genesee	N. Y., L. E. & W. R. R	1,526
Genesee Bridge	N. Y., L. E. & W. R. R	548
Geneseo Valley Junction	N. Y. C. & H. R. R. R	543
Genesseo	N. Y., L. E. & W. R. R	600
Geneva	N. Y. C. & H. R. R. R	459
George, Lake	Toner	324
Georgetown	S. & C. V. R. R	1,450
Getman, Geodetic Station	N. Y. State Survey	994
Giants of the Valley	Adirondack Survey	4,530
Gilbertsville, Geodetic Station	N. Y. State Survey	521
Gilboa Hotel (Catskills)	Appal. Club	1,036
Giles, Geodetic Station	N. Y. State Survey	1,265
Glendale	U. & B. R. R. R	780
Glennda, Lake	N. Y., B. & M. R. R	505
Glenham	N., D. & C. R. R	213
Glen, The	Adir. R. R	712
Gloversville	F., J. & G. R. R	800
Gordon Gap, road (Catskills)	Appal. Club	2,504
Gordon Hill (Catskills)	Appal. Club	2,629
Goshen	N. Y., L. E. & W. R. R	431
Gothic Mountain	Adirondack Survey	4,744
Gowanda	B. & S. W. R. R	776
Graham Mountain, Dry Brook	Appal. Club	3,886
Granby	O. & S. R. R	390
Grand Gorge	U. & D. R. R	1,574
Grandview, Geodetic Station	N. Y. State Survey	420
Graves Mountain	Adirondack Survey	2,345

Station.	Authority.	Elevation.
		Feet.
Gray Peak	Adirondack Survey	4,984
Great Bend	U. & B. R. R. R	649
Great Valley	N. Y., L. E. & W. R. R	1,393
Greenbush	U. S. C. & G. S	26
Do	N. Y. C. & H. R. R. R	24
Greene	U. C. & S. V. R. R	916
Greenfield	Adirondack R. R	564
Green's Corners	N. Y. C. & H. R. R. R	466
Green, Geodetic Station	N. Y. State Survey	974
Greenwood	N. Y., L. E. & W. R. R	520
Grenadier, Geodetic Station	U. S. Lake Survey	268
Grey Court	N. Y., L. E. & W. R. R	432
Griffin's Corners	U. & D. R. R	1,504
Griswold's	N. Y., L. E. & W. R. R	1,044
Groton	S. C. R. R	997
Groveville	N. D. & C. R. R	177
Guilderland	A. & S. R. R	329
Guilford Junction, New Berlin R. R	N. Y. & O. R. R	1,083
Gull Lake	State Survey of N. Y	2,019
Hackensack River	N. Y., L. E. & W. R. R	106
Hadley	Adirondack R. R	606
Halcott Gap, summit road (Catskills)	Appal. Club	2,725
Halcott Mountain (Catskills)	Appal. Club	3,504
Halcottsville	U. & D. R. R	1,403
Hale's Eddy	N. Y., L. E. & W. R. R	980
Hallenback, Geodetic Station	N. Y. State Survey	638
Halsteads	P., H. & B. R. R	596
Hamburg	B. & S. W. R. R	800
Do...Geodetic Station	U. S. Lake Survey	598
Hamburg	L. S. & M. S. R. R	635
Hamilton College, top of Chapel Dome, Geodetic Station	N. Y. State Survey	1,004
Hamilton's	N. Y., L. E. & W. R. R	920
Hamlin	R., W. & O. R. R	310
Hammond	U. & B. R. R. R	346
Hampton	N. Y., L. E. & W. R. R	430
Hancock	N. Y., L. E. & W. R. R	926
Hankin's	N. Y., L. E. & W. R. R	810
Harford	S. C. R. R	1,186
Harlem River Station	N. Y., N. H. & H. R. R	9
Harpersville	W. & S. R. R	1,052
Harrington's Pond (Adirondacks)	Adirondack Survey	1,743
Havana	N. C. R. R	447
Hayden Mountain (Catskills)	Appal. Club	2,900
Haystack Mountain	Adirondack Survey	5,007
Do	Adirondack Survey	4,855
Hayt's Corners	G., I. & S. R. R	396
Helching's Pond	Adirondack Survey	1,697
Helsinger Notch (Catskills)	Appalachian Club	2,677
Henderson Lake	Adirondack Survey	1,838
Do	Toner	1,936
Do	Guyot	1,829
Henrietta	N. Y., L. E. & W. R. R	564
Henson Gap, summit road (Catskills)	Appal. Club	1,989
Hensonville Cross-roads (Catskills)	Appal. Club	1,646
Herkimer	N. Y. C. & H. R. R. R	398
Herkimer, Geodetic Station	N. Y. State Survey	507
High Bridge	N. Y. C. & N. R. R	8
High Knob (Catskills)	Appal. Club	2,654
Highland Mills	N. Y., L. E. & W. R. R	480
High Peak (Catskills)	Appal. Club	3,664
High Point (Catskills)	Appal. Club	3,098
Hilldale	N. Y. & H. R. R	671
Hill's Branch	G., I. & S. R. R	396

Station.	Authority.	Elevation.
		Feet.
Himrod's	N. C. R. R	799
Hinsdale	N. Y., L. E. & W. R. R	1,501
Hoffman Mountain	Adirondack Survey	3,728
Hoffman's	N. Y., C. & H. R. R. R	266
Holland	B., N. Y. & P. R. R	1,176
Holland Patent	U. & B. R. R. R	630
Holley	N. Y., C. & H. R. R. R	537
Holmes' Hill (Adirondacks)	Adirondack Survey	2,086
Holmesville	R. W. & O. R. R	320
Homer	S. & B. R. R	1,131
Honeoye	N. Y., C. & H. R. R. R	777
Honey Pond (Adirondacks)	Adirondack Survey	1,644
Hooper	N. Y., L. E. & W. R. R	839
Hopewell	N. C. R. R	850
Do	N., D. & C. R. R	252
Hornellsville	N. Y., L. E. & W. R. R	1,161
Horseheads	N. C. R. R	865
Do	U., I. & E. R. R	899
Howell's	N. Y., L. E. & W. R. R	699
Howe's Cave	A. & S. R. R	782
Hewlett Hill, Geodetic Station	Gardiner	1,136
Hobsie, Geodetic Station	Gardiner	1,198
Hudson	U. S. C. & G. S	8
Do	N. Y. C. & H. R. R. R	4
Hunter Mountain (Catskills)	Appal. Club	4,038
Hunter Village, Rusk's Catskills	Appal. Club	1,609
Hunt's	N. Y., L. E. & W. R. R	1,339
Hurricane Mountain	Adirondack Survey	3,763
Husteds	N., D. & C. R. R	846
Hyndsville	A. & S. R. R	1,112
Ilion	N. Y. C. & H. R. R. R	400
Ilion, Geodetic Station	N. Y. State Survey	549
Indian Head, East peak (Catskills)	Appal. Club	3,340
Do.....Middle peak (Catskills)	Appal. Club	3,510
Do.....West peak (Catskills)	Appal. Club	3,581
Indian Lake (Adirondacks)	Adirondack Survey	1,669
Indian Pass (Adirondacks)	Adirondack Survey	2,902
Do.....(Catskills)	Appal. Club	2,694
Iodus, Geodetic Station	U. S. Lake Survey	598
Iron Works (Adirondacks)	Adirondack Survey	1,769
Irving	L. S. & M. S. R. R	586
Ischua	B., N. Y. & P. R. R	1,541
Ithaca	G., I. & S. R. R	392
Do	C. & S. R. R	377
Do	U., I. & E. R. R	840
Jackson, Geodetic Station	N. Y. State Survey	1,420
Jamestown	A. & G. W. R. R	1,321
Jamieson	B., N. Y. & P. R. R	894
Janesville	S. & B. R. R	591
Jessup's Landing	Adirondack R. R	606
Johnston	F., J. & G. R. R	659
Jordan	N. Y. C. & H. R. R. R	406
Kasvay Summit	R. W. & O. R. R	639
Kelley's Corner	U. & D. R. R	1,378
Kennedy	A. & G. W. R. R	1,264
Kimball Mountain (Catskills)	Appal. Club	3,960
Kinderhook	Boston & Albany R. R	318
King's	Adirondack R. R	588
King's Bridge	N. Y. C. & N. R. R	8
King's Ferry	G., I. & S. R. R	394
Kingsley, Geodetic Station	N. Y. State Survey	537
Kingston	W. V. R. R	186
Kingston	U. & D. R. R	159
Kirkland	Rome & C. R. R	540

Station.	Authority.	Elevation.
		Feet.
Pine Plains	P., H. & B. R. R.	470
Pine Valley	N. C. R. R.	865
Pinnacle Hill, Geodetic Station	U. S. Lake Survey	752
Pisco, Lake	Toner	1,648
Pisgah (Catskills)	Appal. Club	2,905
Pittsfield Summit	N. Y., K. & S. R. R	1,568
Plaaterkill Mountain (Catskills)	Appal. Club	3,280
Placid Lake	State Survey of N. Y	1,991
Do	Adirondack Survey	1,950
Platt Creek Church (Catskills)	Appal. Club	1,683
Plattsburgh	Chat. R. R.	119
Pleasant Lake (Adirondacks)	Toner	1,706
Do do	Adirondack Survey	1,579
Pleasant Mountain	U. & D. R. R.	699
Pleasant Valley	P., H. & B. R. R	199
Point of Rocks (Catskills)	Appal. Club	2,175
Poland	A. & G. W. R. R.	1,269
Poolville	U., C. & S. B. R. R	1,099
Portage	N. Y., L. E. & W. R. R	1,314
Port Bryan	N. Y. C. & H. R. R. R	406
Port Crane	A. & S. R. R.	1,041
Port Jervis	N. Y., L. E. & W. R. R	442
Port Leyden	U. & B. R. R	900
Portville	B., N. Y. & P. R. R	1,442
Post Creek P. O	S., G. & C. R. R	1,187
Poughkeepsie	U., S. C. & G. S	42
Do	P., H. & B. R. R	179
Do	N. Y. C. & H. R. R. R.	139
Pratteville Hotel (Catskills)	Appal. Club	1,164
Preble	S. & B. R. R.	1,183
Preston Hollow (Catskills)	Appal. Club	870
Prospect	B., C. & P. R. R	1,221
Do (Center Peak)	Appal. Club	2,591
Prospect, Geodetic Station	N. Y. State Survey	1,380
Prospects	U. & B. R. R. R	1,010
Protection	B., N. Y. & P. R. R	1,383
Puffer Pond (Adirondacks)	Adirondack Survey	2,193
Pulaski	R., W. & Og. R. R	377
Rafinesque Mountain (Adirondacks)	U. S. C. & G. S	1,186
Raft Hill	Adirondack Survey	2,105
Ragged Mountain	Adirondack Survey	4,163
Do by level (Adirondacks)	Adirondack Survey	4,127
Ramapo	N. Y., L. E. & W. R. R	310
Randolph	A. & G. W. R. R.	1,318
Rathbonville	N. Y., L. E. & W. R. R.	1,015
Raven Hill	Adirondack Survey	1,982
Reaman, Geodetic Station	N. Y. State Survey	799
Red Creek	N. Y., L. E. & W. R. R.	525
Redfalls P. O. (Catskills)	Appal. Club	1,270
Redfield, Mount	Adirondack Survey	4,688
Red House	A. & G. W. R. R.	1,353
Remson	U. & B. R. R. R.	1,185
Redwood	U. & B. R. R. R	366
Richford	S. C. R. R	1,097
Rich Lake	Geol. Survey of N. Y.	1,547
Richland Junction	R., W. & O. R. R	523
Richmond	R., W. & O. R. R	524
Richmond Cone (Catskills)	Appal. Club	3,202
Richmondville	A. & S. R. R	1,173
Richville	N. Y. C. & H. R. R. R	828
Rift Hill	Adirondack Survey	2,141
Riga Mountain	P., H. & B. R. R	779
Ripley	L. S. & M. S. R. R	750
Ripley crossing	L. S. & M. S. R. R	736

Station.	Authority.	Elevation.
		Feet.
, Mount	Geol. Survey of N. Y	5,183
	U. I. & E. R. R	1,090
y's	G. I. & S. R. R	396
ı, Mount	Geol. Survey of N. Y	5,000
	N. Y., L. E. & W. R. R	576
ı Mountain	Adirondack Survey	4,371
	N. Y. C. & N. R. R	641
Lake	N. Y., B. & M. R. R	661
Corners (Catskills)	Appal. Club	1,964
ille	U., I. & E. R. R	1,057
	N. Y. C. & H. R. R. R	416
	S. & C. V. R. R	742
Centre	S. & C. V. R. R	435
le, Geodetic Station	U. S. Lake Survey	725
l (Catskills)	Appal. Club	1,520
rn, Geodetic Station	N. Y. State Survey	1,214
ı	S. & B. R. R	1,026
	U. & B. R. R. R	587
Mount	Adirondack Survey	5,403
..do..	Guyot	5,379
..do..	Adirondack Survey	5,334
..do.. Timber line on		4,851
urg	U. & B. R. R. R	760
	S. C. R. R	367
l	A. & S. R. R	1,220
ake	Geol. Survey of N. Y	1,860
	Adirondack Survey	1,824
n	U., D. & C. R. R	119
Mount	Adirondack Survey	2,511
	Adirondack Survey	2,474
	F., J. & G. R. R	759
	B., C. & P. R. R	1,300
	N. Y. C. & H. R. R. R	545
	N. Y. C. & H. R. R. R	410
Corners	N. Y. C. & N. R. R	346
odetic Station	N. Y. State Survey	1,328
	R., W. & Og. R. R	375
rg Railroad depot (Catskills)	Appal. Club	640
wn	N. Y., L. E. & W. R. R	562
	N., D. & C. R. R	566
Corners	N. Y. C. & H. R. R. R	896
	N. Y. & H. R. R	702
	N. C. R. R	857
Geodetic Station	N. Y. State Survey	1,343
s	N., D. & C. R. R	966
l (Catskills)	Appal. Club	2,810
	O. & S. R. R	334
ı (Adirondacks)	Adirondack Survey	1,338
untain (Catskills)	Appal. Club	3,807
Geodetic Station	N. Y. State Survey	881
Hill (Mucky) (Catskills)	Appal. Club	2,489
	N. Y., L. E. & W. R. R	523
ery	N. Y., L. E. & W. R. R	386
ke	Toner	1,772
	D., A. V. & P. R. R	1,303
	N., D. & C. R. R	439
ıke	Geol. Survey of N. Y	2,239
	Adirondack Survey	2,203
	S. C. R. R	732
rille, Geodetic Station	U. S. Lake Survey	885
	L. S. & M. S. R. R	627
ock	N. Y. C. & N. R. R	9
ville	Chat. R. R	449
vn	U. & B. R. R. R	251

Station.	Authority.	Elevation.
		Feet.
Moss Lake	Geol. Survey of N. Y	4,312
Moth's Corners	U., I. & E. R. R	945
Mountainville	N. Y., L. E. & W. R. R	260
Mount Morris	N. Y., L. E. & W. R. R	595
Mud Lake	Geol. Survey of N. Y	1,747
Do..Lake	Adirondack Survey	1,738
Mumford	R. & S. L. R. R	618
Munn Davis, Geodetic Station	N. Y. State Survey	538
Munroe	N. Y., L. E. & W. R. R	606
Murrey	N. Y. C. & H. R. R. R	568
Nannet	N. Y., L. E. & W. R. R	284
Narrowsburg	N. Y., L. E. & W. R. R	720
Neely Town	N. Y., L. E. & W. R. R	380
Nellis, Geodetic Station	N. Y. State Survey	588
Newark	N. Y. C. & H. R. R. R	418
Newark Valley	S. C. R. R	966
Newburgh	N. Y., L. E. & W. R. R	25
Do	N. Y., W. S. & B. R. R	11
Newburgh Junction	N. Y., L. E. & W. R. R	521
Newcombe, Lake	Toner	1,698
Newfield	G., I. & S. R. R	527
New Haven	R. W. & O. R. H	306
New Milford	W. V. R. R	452
New Platz	W. V. R. R	266
Newport	R. & L. O. R. R	396
New Rochelle	N. Y. & N. H. R. R	70
New Scotland	A. & S. R. R	327
New Windsor	N. Y., L. E. & W. R. R	192
New York, junction of Chatham street and Broadway	N. Y. & N. H. R. R	34
Do....27th street depot	N. Y. & N. H. R. R	37
Do....42d street depot (Grand Central)	N. Y. & N. H. R. R	52
Do....Harlem Bridge	N. Y. & N. H. R. R	12
Do....Chambers street	N. Y. C. & H. R. R. R	22
Do....Signal Station	U. S. Signal Office	164
Do....Manhattan Gas Works (18th st.)	U. S. C. & G. S	15
Niagara Falls	N. Y. C. & H. R. R. R	574
Niger, Lake	Geol. Survey of N. Y	1,842
Niles, Geodetic Station	N. Y. State Survey	1,623
Nineveh Junction	A. & S. R. R	1,032
Nipple Top	Geol. Survey of N. Y	4,900
Do	Adirondack Survey	4,684
Nobody's	N. Y., L. E. & W. R. R	748
North Beacon	Guyot	1,471
North Collins	B. & S. W. R. R	846
North Creek	Adir. R. R	976
North Mountain, East Peak (Catskills)	Appal. Club	3,285
Do.....Outlook (Catskills)	Appal. Club	3,100
Do.....W. Stopel (Catskills)	Appal. Club	3,440
North River Mountain..(Adirondacks)	Geol. Survey of N. Y	3,600
Do.....do	Adirondack Survey	3,759
Do.....do	Adirondack Survey	3,722
Northville	F., J. & G. R. R	770
North Yonkers	N. Y. C. & N. R. R	164
Norton's	D., A. V. & P. R. R	991
Do	G., I. & S. R. R	404
Norwich	U., C. & S. R. R	1,001
Nunda	N. Y., L. E. & W. R. R	1,336
Odells	N. Y. C. & N. R. R	119
Ogdensburg	U. & B. R. R. R	248
Olean	N. Y., L. E. & W. R. R	1,438
Olive Branch	U. & D. R. R	504
Olympus, Geodetic Station	Gardiner	681
Oneida	N. Y. C. & H. R. R. R	440

Station.	Authority.	Elevation.
		Feet.
tor Mountain	Adirondack Survey	3,041
	Adirondack Survey	3,005
	U., I. & E. R. R	996
	G., I. & S. R. R	1,006
port	N. Y. C. & H. R. R. R	530
s	N. Y. C. & H. R. R. R	301
Brook	B., N. Y. & P. R. R	757
Valley	N. Y., L. E. & W. R. R	450
Water	N. Y., L. E. W. R. R	1,370
op (Catskill)	Appal. Club	3,567
	N. Y. C. & H. R. R. R	894
	N. Y., L. E. & W. R. R	910
d	U. & D. R. R	1,771
dville	P., H. & B. R. R	323
, junction with O. & S. R. R	N. C. R. R	904
	N. C. R. R	810
ill, Geodetic Station	N. Y. State Survey	1,793
ine, N. Y. & Mass	P., H. & B. R. R	784
ine Junction, with extension of R. R	N. C. R. R	909
ine, Mass. and N. Y	Bost. & Albany R. R	914
urgh	A. & G. W. R. R	1,404
gville	U. & B. R. R. R	580
	O. & S. R. R	373
	P., H. & B. R. R	388
Junction	U., D. & C. R. R	437
le	U. & B. R. R	560
ort	N. Y., L. E. & W. R. R	896
reek	Adir. R. R	569
Hollow	U. & D. R. R	419
Mountain, east end (Catskills)	Appal. Club	3,844
Point, Geodetic Station	U. S. Lake Survey	276
Ponds	Geol. Survey of N. Y	1,536
ns	G. I. & S. R. R	654
sville (Catskills)	Appal. Club	1,215
n Point, Geodetic Station	U. S. Lake Survey	611
sant	U. S. C. & G. S	20
	N. Y., L. E. & W. R. R	298
rdale	B., C. & P. R. R	1,629
	N. Y., L. E. & W. R. R	1,373
Hill	N. Y., K. & S. R. R	1,613
Rock (Catskills)	Appal. Club	2,115
sion Bridge	N. Y. C. & H. R. R. R	580
Gap, road (Catskills)	Appal. Club	2,235
Hill (Catskills)	Appal. Club	2,573
	N. Y., L. E. & W. R. R	1,313
ood	U., I. & E. R. R	1,059
e	N. Y. C. & H. R. R. R	403
Mountain (Catskills)	Appal. Club	3,865
s (Marcy)	Adirondack Survey	5,403
n	N. Y., L. E. & W. R. R	480
	P., H. & B. R. R	694
Geodetic Station	N. Y. State Survey	755
sville Hotel (Catskills)	Appal. Club	1,926
wn Heights	N. Y. C. & N. R. R	387
Geodetic Station	N. Y. State Survey	1,948
nnock	G., I. & S. R. R	411
Mountain	Geol. Survey of N. Y	4,500
the Clouds, Lake	Geol. Survey of N. Y	4,327
Geodetic Station	N. Y. State Survey	407
	U. & B. R. R. R	341
Junction	U. & B. R. R. R	405
nth Pond (Adirondacks)	Adirondack Survey	1,652
n	Adir. R. R	5[illegible]5

Station.	Authority.	Elevation.
		Feet.
Pine Plains	P., H. & B. R. R.	470
Pine Valley	N. C. R. R.	865
Pinnacle Hill, Geodetic Station	U. S. Lake Survey	752
Pisco, Lake	Toner	1,648
Pisgah (Catskills)	Appal. Club	2,905
Pittsfield Summit	N. Y., K. & S. R. R	1,568
Plaaterkill Mountain (Catskills)	Appal. Club	3,280
Placid Lake	State Survey of N. Y	1,991
Do	Adirondack Survey	1,950
Platt Creek Church (Catskills)	Appal. Club	1,683
Plattsburgh	Chat. R. R.	119
Pleasant Lake (Adirondacks)	Toner	1,706
Do ....do	Adirondack Survey	1,579
Pleasant Mountain	U. & D. R. R.	699
Pleasant Valley	P., H. & B. R. R	199
Point of Rocks (Catskills)	Appal. Club	2,178
Poland	A. & G. W. R. R.	1,269
Poolville	U., C. & S. B. R. R	1,099
Portage	N. Y., L. E. & W. R. R	1,314
Port Bryan	N. Y. C. & H. R. R. R	406
Port Crane	A. & S. R. R.	1,041
Port Jervis	N. Y., L. E. & W. R. R	442
Port Leyden	U. & B. R. R	900
Portville	B., N. Y. & P. R. R	1,442
Post Creek P. O	S., G. & C. R. R	1,187
Poughkeepsie	U., S. C. & G. S	42
Do	P., H. & B. R. R	179
Do	N. Y. C. & H. R. R. R.	139
Pratteville Hotel (Catskills)	Appal. Club	1,164
Preble	S. & B. R. R.	1,183
Preston Hollow (Catskills)	Appal. Club	870
Prospect	B., C. & P. R. R	1,2[illegible]21
Do..(Center Peak)	Appal. Club	2,5[illegible]01
Prospect, Geodetic Station	N. Y. State Survey	1,3[illegible]0
Prospects	U. & B. R. R. R.	1,0[illegible]10
Protection	B., N. Y. & P. R. R	1,3[illegible]33
Puffer Pond (Adirondacks)	Adirondack Survey	2,1[illegible]77
Pulaski	R., W. & Og. R. R	3[illegible]36
Rafinesque Mountain (Adirondacks)	U. S. C. & G. S	1,1[illegible]05
Raft Hill	Adirondack Survey	2,1[illegible]53
Ragged Mountain	Adirondack Survey	4,1[illegible]27
Do.....by level (Adirondacks)	Adirondack Survey	4,12[illegible]10
Ramapo	N. Y., L. E. & W. R. R	31[illegible]18
Randolph	A. & G. W. R. R.	1,31[illegible]15
Rathbonville	N. Y., L. E. & W. R. R.	1,01[illegible]2
Raven Hill	Adirondack Survey	1,98[illegible]99
Reaman, Geodetic Station	N. Y. State Survey	79[illegible]25
Red Creek	N. Y., L. E. & W. R. R.	52[illegible]70
Redfalls P. O. (Catskills)	Appal. Club	1,27[illegible]8
Redfield, Mount	Adirondack Survey	4,68[illegible]3
Red House	A. & G. W. R. R.	1,353[illegible]5
Remson	U. & B. R. R. R.	1,185[illegible]6
Redwood	U. & B. R. R. R.	366[illegible]7
Richford	S. C. R. R	1,097[illegible]7
Rich Lake	Geol. Survey of N. Y.	1,547[illegible]3
Richland Junction	R., W. & O. R. R	523[illegible]4
Richmond	R., W. & O. R. R	524[illegible]2
Richmond Cone (Catskills)	Appal. Club	3,202[illegible]3
Richmondville	A. & S. R. R	1,173[illegible]8
Richville	N. Y. C. & H. R. R. R	828[illegible]1
Rift Hill	Adirondack Survey	2,141[illegible]9
Riga Mountain	P., H. & B. R. R	779[illegible]0
Ripley	L. S. & M. S. R. R	750[illegible]
Ripley crossing	L. S. & M. S. R. R	73[illegible]

Station.	Authority.	Elevation.
		Feet.
Warsaw	R. & S. L. R. R	1,120
Do	N. Y., L. E & W. R. R	1,326
Warwick	W. V. R. R	502
Washingtonville	N. Y., L. E. & W. R. R	310
Waterboro	A. & G. W. R. R	1,276
Waterport	R. W. & O. R. R	349
Watertown	U. & B. R. R. R	455
Do ....Junction	R. W. & O. R. R	403
Waterville	U. C. & S. R. R	1,238
Watkins	N. C. R. R	453
Do	S. G. & C. R. R	1,020
Watts' Flats	A. & G. W. R. R	1,456
Waverly	N. Y., L. E. & W. R. R	836
Wayland	N. Y., L. E. & W. R. R	1,387
Wayland Summit	N. Y., L. E. & W. R. R	1,415
Webster's	N. Y., L. E. & W. R. R	1,348
Weedsport	N. Y. C. & H. R. R. R	404
Weedsport Depot	S. C. R. R	429
Do....crossing N. Y. C. & H. R. R. R. (grade)	S. C. R. R	404
Do....crossing S. C. R. R. (grade)	S. C. R. R	425
Do....crossing Erie Canal (grade)	S. C. R. R	406
Wellsbridge	A. & S. R. R	1,049
Wellsburgh	N. Y., L. E. & W. R. R	831
West Albany	N. Y. C. & H. R. R. R	196
West Danby	G., I. & S. R. R	872
West Durham (Catskills)	Appal. Club	1,884
West Fayette	G., I. & S. R. R	609
Westfield	L. S. & M. S. R. R	697
Do ..Geodetic Station	U. S. Lake Survey	1,479
West Hurley	U. & D. R. R	534
West Jewett Mountain (Catskills)	Appal. Club	3,025
West Junction	N. Y., L. E. & W. R. R	920
Westkill Village (Catskills)	Appal. Club	1,538
Westmoreland	R. & C. R. R	528
West Rush	N. Y. C. & H. R. R. R	562
West Saugerties (quarry bank)	Appal. Club	660
West Somers	N. Y. C. & N. R. R	517
Wheatland	R. N. & P. R. R	590
Whiteface Mountain	Geol. Survey of N. Y	4,900
Do	Adirondack Survey	4,955
White Church	U., I. & E. R. R	958
Whitehall	R. & S. R. R	115
White House	N. Y., L. E. & W. R. R	1,530
White Plains	N. Y. & H. R. R	202
Whiteport	W. V. R. R	189
Whitesboro	N. Y. C. & H. R. R. R	415
Windsor	A. & S. R. R	942
Willett's Point	G., I. & S. R. R	405
Willett, Geodetic Station	N. Y. State Survey	894
Williams, Geodetic Station	N. Y. State Survey	1,163
Williamston	R., W. & O. R. R	604
Willow Brook	P., H. & B. R. R	351
Wileysville	U., I. & E. R. R	940
Wilmington Village (Adirondacks)	Adirondack Survey	1,022
Wilson	R., W. & O. R. R	300
Windham Centre Hotel (Catskills)	Appal. Club	1,510
Windham High Peak (Catskills)	Appal. Club	3,534
Wolcott	R., W. & O. R. R	360
Wolfe, Geodetic Station	U. S. Lake Survey	308
Woodbury	N. Y., L. E. & W. R. R	442
Woodhull Lake	Toner	2,019
Woodstock	C., C. & De R. R. R	1,295
Woodstock Hotel (Catskills)	Appal. Club	594

Station.	Authority.	Elevation.
		Feet.
Seeley, Geodetic Station	N. Y. State Survey	1,109
Seneca Lake	Geol. Survey of N. Y	370
Do	G., I. & S. R. R	445
Do	S., G. & C. R. R	447
Seward	A. & S. R. R	1,177
Seward Mountain (Adirondacks)	Adirondack Survey	4,319
Do	Adirondack Survey	4,385
Seymore, Mount	Adirondack Survey	3,929
Shakers	N. Y., L. E. & W. R. R	574
Shandaken	U. & D. R. R	1,072
Sharon	A. & S. R. R	1,353
Shawangunk	W. V. R. R	277
Shed's Corners	C., C. & De R. R. R	1,383
Shekomeko	U., D. & C. R. R	667
Sheridan	L. S. & M. S. R. R	664
Do	N. Y., L. E. & W. R. R	760
Sherman	B. C. & P. R. R	1,568
Sherwood, Geodetic Station	N. Y. State Survey	799
Shoemaker, Geodetic Station	N. Y. State Survey	1,372
Shokan	U. & D. R. R	537
Shurtleff's	U. & B. R. R. R	416
Sidney	A. & S. R. R	990
Sidney Centre	N. Y. & O. R. R	997
Do. Plains	N. Y. & O. R. R	1,393
Silver Creek	L. S. & M. S. R. R	623
Do. Geodetic Station	U. S. Lake Survey	726
Silver Lake	Geol. Survey of N. Y	1,983
Do. Mountain	Adirondack Survey	2,604
Sinclairville	D., A. V. & P. R. R	1,330
Sing Sing	N. Y. C. & H. R. R. R	9
Sister Knob (Catskills)	Appal. Club	3,002
Skaneateles, Lake	Toner	932
Skidmore	D., A. V. & P. R. R	1,317
Skylight Mountain	Adirondack Survey	4,978
Slide Mountain (Catskills)	Appal. Club	4,205
Slingerlands	A. & S. R. R	214
Sloatsburgh	N. Y., L. E. & W. R. R	350
Smithsborough	N. Y., L. E. & W. R. R	799
Smith's Lake	Geol. Survey of N. Y	1,775
Do. (Adirondacks)	Adirondack Survey	1,738
Smith's Mills	N. Y, L. E. & W. R. R	1,010
Smith's Valley	U., C. & B. R. R	1,140
Smithton (Catskills)	Appal. Club	1,268
Snowy Mountain	Adirondack Survey	3,804
Do. (Adirondacks)	Adirondack Survey	3,860
Snyder's	U. I. & E. R. R	995
Sodus	R., W. & O. R. R	430
Somerset	R., W. & O. R. R	332
Sonyea	N. Y., L. E. & W. R. R	592
Sorrell Hill, Geodetic Station	N. Y. State Survey	641
South Avon	N. Y. L. E. & W. R. R	620
Do	N. Y. L. E. & W. R. R	725
South Corinth	Adirondack Survey	606
South Cortland	U., I. & E. R. R	1,151
South Dover	N. Y. & H. R. R	415
South Durham	Appal. Club	969
Southfield	N. Y., L. E. & W. R. R	491
South Livonia	N. Y., L. E. & W. R. R	1,167
South McIntyre Mountain	Adirondack Survey	4,938
South Mountain (Adirondacks)	Adirondack Survey	1,917
Do. near Mountain House (Catskills)	Appal. Club	2,497
South Wales	B., N. Y. & P. R. R	991
South Yonkers	N. Y. C. & N. R. R	145

NORTH CAROLINA.

Station.	Authority.	Elevation.
		Feet.
r, Mount	Guyot	6,447
tt's Balsam	Guyot	6,278
	U. S. C. & G. S	1,547
	R. &. A. A. L. R. R	508
	Car. C. R. R	175
ek	N. Carolina R. R	504
nob	U. S. C. & G. S	1,812
ntain	Guyot	5,550
Depot	Car. C. R. R	105
one	Guyot	6,671
llow Mountain	U. S. C. & G. S	4,245
	A. & F. B. V. R. R	876
	U. S. C. & G. S	2,908
gy Mountain	Guyot	6,090
do	U. S. C. & G. S	6,068
other	Guyot	6,619
ck	Guyot	5,815
k Knob	U. S. C. & G. S	6,378
	Guyot	6,380
rough	Car. C. R. R	110
Pyramid	Guyot	6,348
	A. M. & O. R. R	1,689
	R. & G. R. R	355
Summit	P. A. L. R. R	803
Plott	Guyot	6,246
arah Depot	Car. C. R. R	100
Mount	Guyot	6,599
ad	Guyot	5,935
	R. & A. A. L. R. R	309
teras, Signal Station	U. S. Signal Office	8
kout, Signal Station	U. S. Signal Office	15
Knob	U. S. C. & G. S	2,284
City	A. & N. C. R. R	10
	R. & A. A. L. R. R	501
	W. N. C. R. R	1,294
Peak	Guyot	6,611
rk	N. Carolina R. R	418
	Charlotte, C. & A. R. R	747
	Car. C. R. R	725
Signal Station	U. S. Signal Office	838
Peak	Guyot	6,234
Top Mountain	U. S. C. & G. S	4,573
	U. S. C. & G. S	1,606
	N. Carolina R. R	347
t's Mountain	Guyot	6,707
ntain	U. S. C. & G. S	4,627
	Guyot	6,063
ng Mountain	Guyot	5,915
Gap	W. N. C. R. R	1,269
	Guyot	5,426
Pinnacle	Guyot	5,945
	C. & L. N. G. R. R	944
ntain	Guyot	6,233
ramp	A. & N. C. R. R	66
	N. Carolina R. R	400
	A. & F. B. V. R. R	1,043
wning Creek Mountain	U. S. C. &. G. S	2,126
ack or Terrapin Mountain	U. S. C. & G. S	4,510

Station.	Authority.	Elevation.
		Feet
Tilly Foster	N. Y. C. & N. R. R.	40
Tioga	N. Y., L. E. & W. R. R.	90
Tip Top Summit	N. Y., L. E. & W. R. R.	1,76
Tivoli	U. S. C. & G. S	
Tonawanda	N. Y. C. & H. R. R. R.	58
Do....Geodetic Station	U. S. Lake Survey	62
Tower Mountain (Catskills)	Appal. Club	2,93
Towners	N. Y. & H. R. R.	43
Town Line	N. Y., L. E. & W. R. R.	74
Traver Geodetic Station	N. Y. State Survey	23
Treeville	U., I. & E. R. R.	1,030
Trenton Falls	U. & B. R. R. R.	840
Trews	N. Y., L. E. & W. R. R.	872
Tribes Hill	N. Y. C. & H. R. R. R.	305
Troy	N. Y. C. & H. R. R. R.	16
Do	R. & S. R. R.	30
Trumansburg	G., I. & S. R. R.	878
Truxton	C., C. & De R. R. R.	1,135
Tully, Lake	Toner	1,200
Tupper's Lake	Geol. Survey of N. Y.	1,554
Do	Adirondack Survey	1,504
Turk's Hill, Geodetic Station	U. S. Lake Survey	931
Turners	N. Y., L. E. & W. R. R	556
Unadilla	A. & S. R. R.	1,022
Undercliff (Catskills)	Appal. Club	2,200
Union	N. Y., L. E. & W. R. R	840
Union Springs	G., I. & S. R. R	394
Upper Preston Pond (Adirondacks)	Adirondack Survey	2,170
Upper Saranac Lake		1,567
Utica	N. Y. C. & H. R. R. R. R	410
Do	U., C. & B. R. R.	446
Do	Erie Canal	428
Utsyantha Mt. (Catskills)	Appal. Club	3,203
Vails Gate	N. Y., L. E. & W. R. R	283
Do....Junction	N. Y., L. E. & W. R. R	280
Valley	N. Y., L. E. & W. R. R	300
Van Courtland	N. Y. C. & N. R. R.	20
Vandalia	N. Y., L. E. & W. R. R.	1,415
Van Denburgh, Geodetic Station	N. Y. State Survey	264
Vanetterville	G., I. & S. R. R	1,010
Vanderzee, Geodetic Station	G., I. & S. R. R	158
Van Etten	U., I. & E. R. R.	1,012
Van Hœsen	Boston & Albany R. R.	243
Van Wagner's	P., H. & B. R. R	242
Van Wie, Geodetic Station	N. Y. State Survey	28
Vedder, Geodetic Station	N. Y. State Survey	1,051
Verbank	U., D. & C. R. R.	553
Do..Village	U., D. & C. R. R	522
Vermont	D., A. V. & P. R. R	1,295
Verona	N. Y. C. & H. R. R. R	467
Verplanck	U. S. C. & G. S	34
Victory, Geodetic Station	U. S. Lake Survey	576
Do	N. Y. State Survey	568
Vienna, Geodetic Station	N. Y. State Survey	568
Vlaie, or Fly Mountain (Catskills)	Appal. Club	3,531
Walden	W. V. R. R	351
Wallace	N. Y., L. E. & W. R. R	1,235
Wallface Mountain	Adirondack Survey	3,893
Do.....top (Adirondacks)	Adirondack Survey	3,857
Wallkill Valley Junction	U. & D. R. R	188
Walton	N. Y. & O. R. R.	1,239
Walworth, Geodetic Station	U. S. Lake Survey	656
Warner Pass	N. Y., K. & S. R. R.	1,963
Warner's	N. Y., C. & H. R. R. R.	427

Station.	Authority.	Elavation.
		Feet.
)aks	R. & A. R. R	245
burgh	R. & G. R. R	461
y	R. & G. R. R	200
ook	R. & G. R. R	304
ll, Mount	Guyot	6,582
ll's High Peak	U. S. C. & G. S	6,688
'e	R. & A. R. R	145
	Car. C. R. R	586
ıton	W. N. C. R. R	1,140
	U. S. C. & G. S	572
/ille	N. Carolina R. R	308
eck Station	Car. C. R. R	159
fountain	U. S. C. & G. S	4,597
	R. & G. R. R	270
tiver	N. Carolina R. R	112
:n Depot	A. & N. C. R. R	12
ill	R. & A. R. R	332
ı	C. & L. N. G. R. R	1,070
3uffalo	N. Carolina R. R	686
ld Mountain	Guyot	5,786
›ld Mountain	Guyot	5,100
	R. & A. R. R	246
r Knob	Guyot	5,359
ı	P. A. L. R. R	742
knob	Guyot	5,026
; C. H	A. & F. B. V. R. R	1,093
; Nose	U. S. C. & G. S	4,910
ountain	U. S. C. & G. S	2,413
le	Charlotte C. & A. R. R	575
le Mountain	U. S. C. & G. S	3,832
Mount	U. S. C. & G. S	5,713
	Guyot	5,757
Knob	U. S. C. & G. S	2,680
› Top	Guyot	6,393
on	N. Carolina R. R	160
ı	R. & A. R. R	316
		303
nks	Car. C. R. R	176
Patch Gap	Car. C. R. R	2,242
ille	P. A. L. R. R	831
ɔrk	N. Carolina R. R	649
ıd Balsam Mountain	U. S. C. & G. S	6,370
.....do	Guyot	6,425
'ay	R. & G. R. R	415
fountain	Guyot	6,306
gham Depot	Car. C. R. R	210
gham C. H		274
ınd Knob	Guyot	6,002
Face	Guyot	6,031
Knobs, S. peak	Guyot	5,306
Trail Peak	Guyot	6,488
ıle	Car. C. R. R	127
	P. A. L. R. R	710
›ack Mountain	U. S. C. & G. S	4,563
Depot	N. W. N. C. R. R	884
ry	N. Carolina R. R	760
l	R. & A. R. R	320
C. H.	Car. C. R. R	875
eel	Car. C. R. R	194
Creek Knob	U. S. C. & G. S	2,849
ille, Signal Station	U. S. Signal Office	34
Buffalo	N. Carolina R. R	796
Ridge Top	Guyot	6,076
ıg Indian	U. S. C. & G. S	5,495

Station.	Authority.	Elevation.
		Feet.
Standing Indian	Guyot	[illegible],840
Statesville	W. N. C. R. R	955
Still House Gap	W. N. C. R. R	1,315
Sugar Loaf Mountain	U. S. C. & G. S	3,978
Tyron Mountain	U. S. C. & G. S	3,249
Do.....Northeast summit	U.S. C. & G. S	3,090
Wake	R. & G. R. R	384
Warm Springs	W. N. C. R. R	1,325
Warrenton	R. & G. R. R	451
Weldon	R. & G. R. R	72
Western Bald Mountain	Guyot	5,692
Whitehearts	N. W. N. C. R. R	976
White Rock Ridge	Guyot	5,528
White Side Mountain	U. S. C. & G. S	4,931
Williamston	A. & F. B. V. R. R	873
Wilmington Depot	Car. C. R. R	10
Do.....N. W. Station		50
Do.....Signal Station	U. S. Signal Office	52
Yeates' Knob	Guyot	5,975
Yellow Mountain	Guyot	5,198
Youngville	R. & G. R. R	449

Station.	Authority.	Elevation.
		Feet.
ıs Mill, Lock 27	O. & E. Canal	745
)o.....Lock 28	O. & E. Canal	735
)o.....Lock 29	O. & E. Canal	725
ıs Mills	P., C. & St. L. R. R	731
,ine Junction	L. S. & M. S. R. R	607
n	N. Y., Pa. & O. R. R	1,230
ıe	C. N. R. R	946
ınderville	C., C., C. & I. R. R	725
nce	P., Ft. W. & C. R. R	1,083
ı	P., C. & St. L. R. R	928
ıda	C. & Z. R. R	946
ers	B. & S. W. R. R	670
ia	Cin. & P. R. R	886
ɔrst	L. S. & M. S. R. R	695
rson	M. & C. R. R	708
ver	L. S. & M. S. R. R	1,096
)o..Geodetic Station	U. S. Lake Survey	1,191
nia	C., C., C. & I. R. R	1,006
'erp	T., W. & W. R. R	729
lia	L. E. & L. R. R	806
ıum	I. B. & W. R. R	1,054
bald	L. S. & M. S. R. R	730
trong's Mills	B. & S. W. R. R	794
ınd	N. Y., Pa. & O. R.R	1,079
y	C., C., C. & I. R. R	985
ıbula	Ash. & P. R. R	688
ıbula	L. S. & M. S. R. R	648
ille	Scioto V. R. R	716
ıs	M. & C. R. R	654
)o..B. M. on top of pier of bridge over M. & C.. R. R. and Hockhocking River	U. S. C. & G. S	687
a	B. & P. C. R. R	964
ra	A. & G. W. R. R	1,104
nburgh	Ash. & P. R. R	815
ntown	N. Y., Pa. & O. R. R	1,012
ı	C. N. R. R	689
ısburg	A. & G. W. R. R	999
stown	B., P. & C. R. R	747
w	C. N. R. R	848
s	C., Mt. V. & Del. R. R	1,102
; Mills	C., T. V. & W. R. R	965
ın	C., T. V. & W. R. R	796
ım	B., P. & C. R. R	783
;ia Junction	P. C. & St. L. R. R	491
rd	Cin. & P. R. R	1,076
3ridge	L., S. & M. S. R. R	584
sville	B. & S. W. R. R	1,270
er Dam	L., E. & L. R. R	863
ers	P., C. & St. L. R. R	808
ɔrd	Cin. & P. R. R	941
ın	C., T., V. & W. R. R	860
st	C., C., C. & I. R. R	941
ire	Cin. & P. R. R	655
fontaine	C., C., C. & I. R. R	1,216
vue	L. S. & M. S. R. R	755
re, wing-wall of 2d pier west end B. & R. R. bridge over Ohio River	U. S. C. & G. S	622

Station.	Authority.	Elevation.
		Feet.
Belpre, Hotel	M. & C. R. R	630
Berea	L. S. & M. S. R. R.	787
Bessemer	C. & H. V. R. R	681
Bethel	B. & S. W. R. R	1,255
Big Poland	M. & C. R. R	753
Big Run	Scioto V. R. R	565
Big Sand Furnace	M. & C. R. R	712
Black Creek	C., Mt. V. & Del. R. R	868
Black River	C., T. V. & W. R. R	611
Blanchester	M. & C. R. R	977
Bloomdale	B. & P. C. R. R	756
Bloomfield	Ash. & P. R. R	905
Blue Ash	C. N. R. R	859
Bluffton	L. E. & L. R. R	834
Bolivar (lock)	O. & E. Canal	907
Boston	V. R. R	668
Botzums	V. R. R	750
Bowlersville	N. Y., Pa. & O. R. R	966
Braceville	N. Y., Pa. & O. R. R	907
Brachmans	Cin. & P. R. R	713
Branch Hill	P., C. & St. L. R. R	590
Bremen	C. & M. V. R. R	831
Bremen Summit (lock)	Miami Canal	960
Bricksville	V. R. R	635
Bridgeport	Cin. & P. R. R	659
Brier Hill	A. & P. R. R	852
Brinley's	P. C. & St. L. R. R	1,124
Bristolville	A. & P. R. R	927
Broadway	N. Y., Pa. & O. R. R	1,032
Brookville	P. C. & St. L. R. R	1,033
Brownhelm	L. S. & M. S. R. R	640
Brown's	Cin. & P. R. R	683
Do	P. C. & St. L. R. R	1,060
Do	I. B. & W. R. R	855
Bruce	C., T. Va. & W. R. R	989
Bruss	I. B. & W. R. R	1,092
Bryan	L. S. & M. S. R. R	765
Buchtel	C. & H. V. R. R	687
Buckskin	M. & C. R. R	920
Bucyrus	P., Ft. W. & C. R. R	930
Burbank	N. Y., Pa. & O. R. R	958
Burghill	A. & G. W. R. R	1,044
Butler	C., T. V. & W. R. R	889
Cadiz Junction	P. C. & St. L. R. R	1,091
Caldwell	M. & P. R. R	736
Do	S. V. R. R	811
Do	B. & S. W. R. R	845
Caledonia	C., C., C. & I. R. R	996
California	C. & P. R. R	540
Camden, Goedetic Station	U. S. Lake Survey	891
Camp Dennison	P. C. & St. L. R. R	570
Canal Dover	Cin. & P. R. R	884
Canal Fulton	C., T. V. & W. R. R	947
Canfield	N. Y., Pa. & O. R. R	1,160
Canton	V. R. R	1,031
Captina (mouth of Rocky Fork)	B. & S. W. R. R	778
Carbon Hill	C. & H. V. R. R	696
Cardington	C., C., C. & I. R. R	1,011
Carey	S. D. & C. R. R	818
Carlisle	C. H. & D. R. R	69[illegible]
Carroll	C. & H. V. R. R	83[illegible]
Carthage	C., C., C. & I. R. R	55[illegible]
Catawba	C., C., C. & I. R. R	1,06[illegible]
Cecil	T. W. & W. R. R	7[illegible]

Station.	Authority.	Elevation.
		Feet.
edar Narrows	M. & P. R. R	638
edar Point	Cin. & P. R. R	726
edarville	P. C. & St. L. R. R	1,035
entreburgh (cross O. C. R. R.)	C., Mt. V. & Del. R. R	1,209
entreton	B. & O. R. R	873
entreville	Cin. & P. R. R	870
eylon	L. S. & M. S. R. R	609
hampion	Ash. & P. R. R	932
herry Grove	Cin. & P. R. R	847
hester, Geodetic Station	U. S. Lake Survey	1,292
hester Park	C., C., C. & I. R. R	508
hicago Junction	B. P. & C. R. R	901
hillicothe	D. & S. E. R. R	638
Do....Pedestal, lamp-post, north side of steps, front of court-house.	U. S. C. & G. S	638
hippewa	C. T. V. & W. R. R	1,056
hurch Hill	N. Y., Pa. & O. R. R	1,017
incinnati, Old depot	C. I., St. L. & C. R. R	501
Do.....Plum street depot		498
Do.....Depot	C. S. R. R	503
Do.....Depot	O. & M. R. R	494
Do.....Depot	C. N. R. R	545
Do.....Depot	C. C. C. & I. R. R	500
Do.....Depot	C. H. & D. R. R	509
Do.....B. M. on west abutment M. & C. R. R. bridge over Mill Cr.	U. S. C. & G. S	495
Do.....B. M. on front water-table of court-house	U. S. C. & G. S.	547
Do.....H. W. in Ohio River, 1858		484
Do.....H. W. in Ohio River, 1847	M. & C. R. R	511
Do.....H. W. in Ohio River, 1832	M. & C. R. R	511
Do.....Signal Station	U. S. Signal Office	620
Do.....Upper level of canal	Miami Canal	596
Do.....L. W., Ohio River (city base)	M. & C. R. R	440
ircleville	C. & M. V. R. R	720
Do....Main street crossing	S. V. R. R	682
Do....C. & M. V. R. R		690
laridon, Geodetic Station	U. S. Lake Survey	1,366
larkesville	C. & Z. R. R	833
larks	I., B & W. R. R	1,080
laysville	P. C. & St. L. R. R	756
leveland	A. & G. W. R. R	598
Do ..Union Depot	Cin. & P. R.R	583
Do ..Machine shop	Cin. & P. R. R	629
Do ..Euclid avenue	Cin. & P. R. R	668
Do ..Newburgh	Cin. & P. R. R	797
Do ..Signal Station	U. S. Signal Office	690
Do ..Lock 44, surface of water	O. & E. Canal	586
Cleves	C., I., St. L. & C. R. R	497
Clinton	C., Mt. V. & Del. R. R	959
Clough Pike	C. & P. R. R	890
Clyde	L. S & M. S. R. R	691
Coburg	B. P. & C. R. R	787
College Corner	C., H. & D. R	990
Collins	L. S. & M. S. R. R	879
Columbia	C., C., C. & I. R. R	802
Do	Cin. & P. R. R	503
Columbiana	P., Ft. W. & C. R. R	1,113
Columbus, Union Depot	C. & H. V. R. R	748
Do....Signal Station	U. S. Signal Office	805
Columbus Grove	C., H. & D. R. R	752
Condit	C., Mt. V. & Del. R. R	1,086
Conesville	P., C. & St. L. R. R	738
Conneaut	L. S. & M. S. R. R	652

Station.	Authority.	Elevation.
		Feet.
Coolville	M. & C. R. R	630
Corwin	P., C. & St. L. R. R	729
Coshocton	P., C. & St. L. R. R	771
Coulton	D. & S. E. R. R	718
Coverts Mill	Ash. & P. R. R	790
Crab Apple	B. & S. W. R. R	962
Crestline	C., C., C. & I. R. R	1,155
Do	P., Ft. W. & C. R. R	1,162
Cutler	M. & C. R. R	777
Cuyahoga Falls	C., Mt. V. & Del. R. R	1,011
Danbury, Geodetic Station	U. S. Lake Survey	594
Danville	C., Mt. V. & Del. R. R	968
Davises	S. V. R. R	567
Dawn	C., C., C. & I. R. R	1,018
Dayton, Union depot	C., H. & D. R. R	743
Do..Third street	C., H. & D. R. R	756
Do..C., C., C. & I. R. R. crossing	N. Y., Pa. & O. R. R	752
Do..D. & M. R. R. crossing	Miami Canal	739
Deerfield	C. & Z. R. R	650
Defiance		712
Do	W., St. L. & P. R. R	697
Do..(lock)	O. & E. Canal	670
Do..(lock)	O. & E. Canal	678
Do..low water of Maumee	W. & E. Canal	667
Do..Maumee River	T., W. & W. R. R	648
De Graff	C., C., C. & I. R. R	969
Delaware	C., C., C. & I. R. R	903
Delhi	C., I., St. L. & C. R. R	502
Delphos (surface of Miami Canal)	P., Ft. W. & C. R. R	781
Do..(lock)	Miami Canal	78[illegible]
Delta	L., S. & M. S. R. R	81[illegible]
Do	P., C. & St. L. R. R	50[illegible]
Dennison	N. Y., Pa. & O. R. R	1,30[illegible]
Do	P., C. & St. L. R. R	855
Deshler	B., P. & C. R. R	721
Do	C., H. & D. R. R	594
Dexter City	M. & P. R. R	690
Dodson's	P., C. & St. L. R. R	1,051
Dorset	L. S. & M. S. R. R	1,018
Do	L. S. & M. S. R. R	988
Double Roscoe	O. & E. Canal	755
Doughtews	A. & G. W. R. R	973
Dover	C., C., C. & I. R. R	971
Do..(lock)	O. & E. Canal	879
Dresden	P., C. & St. L. R. R	735
Dresden Junction (at connection with P., C. & St. L. R. R)	C. & M. V. R. R	768
Dudley	M. & P. R. R	709
Duvall's	Scioto V. R. R	714
Eagleville	A. & P. R. R	792
Earlville	C. & P. R. R	1,091
East Akron	V. R. R	967
East Liverpool	C. & P. R. R	693
Easton	C., T. V. & W. R. R	961
East Orwell	Ash. & P. R. R	937
East Rochester	Cin. & P. R. R	1,08[illegible]
Eden	C., C., C. & I. R. R	975
Edgerton	L. S. & M. S. R. R	830
Edinburgh	Ash. & P. R. R	78[illegible]
Edison	C., T. V. & W. R. R	68[illegible]
Edwards	C. & H. V. R. R	75[illegible]
Eldorado	P. C. & St. L. R. R	1,17[illegible]
Elliottsville	Cin. & P. R. R	6[illegible]
Ellis	C. & M. V. R. R	7[illegible]

Station.	Authority.	Elevation.
		Feet.
Elmore	L. S. & M. S. R. R	658
Elmwood	Scioto V. R. R	741
Elyria	L. S. & M. S. R. R	713
Do..Geodetic Station	U. S. Lake Survey	755
Elyria Junction	L. S. & M. S. R. R	729
Enon	N. Y., Pa. & O. R. R	875
Enon Crossing	P. C. & St. L. R. R	1,024
Enterprise	C. & H. V. R. R	747
Erie, Lake	U. S. Lake Survey	573
Euclid	L. S. & M. S. R. R	627
Everett	V. R.R	728
Fair Grounds	Scioto V. R. R	769
Fairpoint	C., T. V. & W. R. R	913
Fairview	P., C. & St. L. R. R	1,009
Findlay	L. E. & L. R. R	782
Floodwood	C. & H. V. R. R	669
Florence	P., C. & St. L. R. R	1,140
Flushing	C., T. V. & W. R. R	1,118
Forestville	Cin. & P. R. R	834
Forrest (crossing C. S. & C. R. R.)	P., Ft. W. & C. R. R	940
Fort Ancient	P., C. & St. L. R. R	669
Foster's	P., C. & St. L. R. R	600
Fostoria	L. E. & L. R. R	782
Frankfort	D. & S. E. R. R	750
Franklin	C., C., C. & I. R. R	693
Franklin Furnace	O. R. R. R	549
Franklin Platform	N. Y., Pa. & O. R. R	1,051
Frazeysburgh	P., C. & St. L. R. R	751
Fredericksburgh	C., Mt. V. & Del. R. R	968
Freedom	N. Y., Pa. & O. R. R	1,150
Freeport	P., C. & St. L. R. R	688
Do	C., T. V. & W. R. R	882
Freemont	L. S. & M. S. R. R	632
Fruit Hill	Cin. & P. R. R	819
Galena	C., Mt. V. & Del. R. R	923
Galion	C., C., C. & I. R. R	1,168
Do..C., C., C. & I. R. R. crossing	N. Y., Pa. & O. R. R	1,171
Do..C., C., C. & I. R. R., Ind'polis Div.	N. Y., Pa. & O. R. R	1,166
Gambier	C. Mt. V. & Del. R. R	965
Gann	C. Mt. V. & Del. R. R	874
Gano	C. C. C. & I. R. R	661
Garrettsville	A. & G. W. R. R	1,019
Geneva	L. S. & M. S. R. R	668
Genntown	C. N. R. R	885
Genoa	L. S. & M. S. R. R	629
Girard	A. & G. W. R. R	865
Glade Run	P. C. & St. L. R. R	977
Glendale	C. H. & D. R. R	640
Glen Este	Cin. & P. R. R	876
Gnadenhutten	O. & E. Canal	830
Goes	P. C. & St. L. R. R	863
Gore	C. & H. V. R. R	763
Goshen	C. T. V. & W. R. R	853
Gould's	P. C. & St. L. R. R	679
Grafton	C., C., C. & I. R. R	703
Do	C. T. V. & W. R. R	801
Do..Geodetic Station	U. S. Lake Survey	954
Graytown	L. S. & M. S. R. R	601
Green	N. Y., Pa. & O. R. R	1,129
Greencamp (tank)	N. Y., Pa. & O. R. R	920
Greendale	C. & H. V. R. R	709
Greenfield (crossing of Paint Creek)	M. & C. R. R	893
Greentown	V. R. R	1,108
Greenwich	C. C. C. & I. R. R	1,037

Station.	Authority.	Elevation.
		Feet.
Belpre, Hotel	M. & C. R. R	630
Berea	L. S. & M. S. R. R.	787
Bessemer	C. & H. V. R. R	681
Bethel	B. & S. W. R. R	1,255
Big Poland	M. & C. R. R	753
Big Run	Scioto V. R. R	555
Big Sand Furnace	M. & C. R. R	712
Black Creek	C., Mt. V. & Del. R. R	868
Black River	C., T. V. & W. R. R	611
Blanchester	M. & C. R. R	977
Bloomdale	B. & P. C. R. R	756
Bloomfield	Ash. & P. R. R	905
Blue Ash	C. N. R. R	859
Bluffton	L. E. & L. R. R	834
Bolivar (lock)	O. & E. Canal	907
Boston	V. R. R	668
Botzums	V. R. R	750
Bowlersville	N. Y., Pa. & O. R. R	966
Braceville	N. Y., Pa. & O. R. R	907
Brachmans	Cin. & P. R. R	713
Branch Hill	P., C. & St. L. R. R	590
Bremen	C. & M. V. R. R	831
Bremen Summit (lock)	Miami Canal	960
Bricksville	V. R. R	635
Bridgeport	Cin. & P. R. R	659
Brier Hill	A. & P. R. R	852
Brinley's	P. C. & St. L. R. R	1,124
Bristolville	A. & P. R. R	927
Broadway	N. Y., Pa. & O. R. R	1,032
Brookville	P. C. & St. L. R. R	1,033
Brownhelm	L. S. & M. S. R. R	640
Brown's	Cin. & P. R. R	683
Do	P. C. & St. L. R. R	1,060
Do	I. B. & W. R. R	855
Bruce	C., T. Va. & W. R. R	989
Bruss	I. B. & W. R. R	1,092
Bryan	L. S. & M. S. R. R	765
Buchtel	C. & H. V. R. R	687
Buckskin	M. & C. R. R	920
Bucyrus	P., Ft. W. & C. R. R	930
Burbank	N. Y., Pa. & O. R. R	958
Burghill	A. & G. W. R. R	1,044
Butler	C., T. V. & W. R. R	889
Cadiz Junction	P. C. & St. L. R. R	1,091
Caldwell	M. & P. R. R	736
Do	S. V. R. R	811
Do	B. & S. W. R. R	845
Caledonia	C., C., C. & I. R. R	996
California	C. & P. R. R	540
Camden, Goedetic Station	U. S. Lake Survey	891
Camp Dennison	P. C. & St. L. R. R	570
Canal Dover	Cin. & P. R. R	884
Canal Fulton	C., T. V. & W. R. R	947
Canfield	N. Y., Pa. & O. R. R	1,160
Canton	V. R. R	1,031
Captina (mouth of Rocky Fork)	B. & S. W. R. R	778
Carbon Hill	C. & H. V. R. R	696
Cardington	C., C., C. & I. R. R	1,011
Carey	S. D. & C. R. R	818
Carlisle	C. H. & D. R. R	696
Carroll	C. & H. V. R. R	835
Carthage	C., C., C. & I. R. R	551
Catawba	C., C., C. & I. R. R	1,065
Cecil	T. W. & W. R. R	723

Station.	Authority.	Elevation.
		Feet.
Kennard	N. Y., Pa. & O. R. R	1,174
Kennedy	C. N. R. R	743
Kensington	Cin. & P. R. R	1,130
Kent	N. Y., Pa. & Ohio R. R	1,050 1,273
Kenton	S. D. & C. R. R	1,015
Kessler	I., B. & W. R. R	925
Kings	P., C. & St. L. R. R	612
Kingston	N. Y., Pa. & O. R. R	1,097
Do	Scioto V. R. R	770
Kingsville	L. S. & M. S. R. R	672
Kinnikinnick	Scioto Valley R. R	672
Kipton	L. S. & M. S. R. R	853
Kneisley's	C., C. C. & I. R. R	802
Krumwoy	V. R. R	1,051
Kyles	C., C. C. & I. R. R	718
Do	Cin. & P. R. R	859
Lafferty	C., T. V. & W. R. R	1,027
La Grange	Cin. & P. R. R	679
Do	C., C. C. & I. R. R	828
Lancaster	C. & M. V. R. R	854
La Rue	C., C. C & I. R. R	926
Laughlins	Cin. & P. R. R	949
Laura	I., B. &. W. R. R	970
Lawrence Junction	Ash. & P. R. R	775
Leavittsburgh	A. & G. W. R. R	895
Do.....crossing of main line & Mah. Div	A. & G. W. R. R	907
Lebanon	C. N. R. R	709
Leesburg	M. & C. R. R	1,030
Leetonia	P., Ft. W. & C. R. R	1,016
Do..P., F. W. & C. crossing	N. Y., Pa. & O. R. R	1,018
Leipsic	C., H. & D. R. R	746
Leon	L. S. & M. S. R. R	1,114
Levering	C., C. C. & I. R. R	1,056
Lexington	C. & Z. R. R	896
Liberty	T., W. & W. R. R	683
Do. (Tank)	N. Y., Pa. & O. R. R	1,071
Lima	C. H. & D. R. R	859
Do. crossing O. & M. & P. Ft. W. & C. R. R.	L. E. & L. R. R	885
Do. crossing D. and M. Railroad	P., Ft. W. & C. R. R	779
Limaville	Cin. & P. R. R	1,098
Lindsey	L. S. & M. S. R. R	622
Linwood	P., C. & St. L. R. R	503
Little Hocking	M. & C. R. R	635
Little Mountain, Geodetic Station	U. S. Lake Survey	1,248
Lockbourne	Scioto V. R. R	720
Locke	B. P. & C. R. R	881
Lockport (Lock)	O. & E. Canal	867
Lockville	C. & H. V. R. R	797
Locust Switch	N. Y., Pa. & O. R. R	1,053
Lodi	S. D. & C. R. R	855
Logan	C. & H. V. R. R	729
London	P., C. & St. L. R. R	1,049
Londonderry	M. & C. R. R	625
Londonville	P., Ft. W. & C. R. R	975
Long's Summit	N. Y., Pa. & O. R. R	883
Loveland	C. & Z. R. R	605
Do...B. M. on east abutment M. & C. R. R. bridge over Little Miami River	U. S. C. & G. S	582
Do...B. M. on east abutment M. & C. R. R. bridge over Little Miami River	P. C. & St. L. R. R	581

Station.	Authority.	Elevation.
		Feet.
Coolville	M. & C. R. R	630
Corwin	P., C. & St. L. R. R	729
Coshocton	P., C. & St. L. R. R	771
Coulton	D. & S. E. R. R	718
Coverts Mill	Ash. & P. R. R	790
Crab Apple	B. & S. W. R. R	952
Crestline	C., C., C. & I. R. R	1,155
Do	P., Ft. W. & C. R. R	1,162
Cutler	M. & C. R. R	777
Cuyahoga Falls	C., Mt. V. & Del. R. R	1,011
Danbury, Geodetic Station	U. S. Lake Survey	594
Danville	C., Mt. V. & Del. R. R	968
Davises	S. V. R. R	567
Dawn	C., C., C. & I. R. R	1,018
Dayton, Union depot	C., H. & D. R. R	743
Do..Third street	C., H. & D. R. R	756
Do..C., C., C. & I. R. R. crossing	N. Y., Pa. & O. R. R	752
Do..D. & M. R. R. crossing	Miami Canal	739
Deerfield	C. & Z. R. R	650
Defiance		712
Do	W., St. L. & P. R. R	697
Do..(lock)	O. & E. Canal	670
Do..(lock)	O. & E. Canal	678
Do..low water of Maumee	W. & E. Canal	667
Do..Maumee River	T., W. & W. R. R	648
De Graff	C., C., C. & I. R. R	989
Delaware	C., C., C. & I. R. R	903
Delhi	C., I., St. L. & C. R. R	502
Delphos (surface of Miami Canal)	P., Ft. W. & C. R. R	781
Do..(lock)	Miami Canal	784
Delta	L., S. & M. S. R. R	819
Do	P., C. & St. L. R. R	504
Dennison	N. Y., Pa. & O. R. R	1,308
Do	P., C. & St. L. R. R	855
Deshler	B., P. & C. R. R	721
Do	C., H. & D. R. R	594
Dexter City	M. & P. R. R	690
Dodson's	P., C. & St. L. R. R	1,051
Dorset	L. S. & M. S. R. R	1,018
Do	L. S. & M. S. R. R	988
Double Roscoe	O. & E. Canal	755
Doughtews	A. & G. W. R. R	973
Dover	C., C., C. & I. R. R	971
Do..(lock)	O. & E. Canal	879
Dresden	P., C. & St. L. R. R	735
Dresden Junction (at connection with P., C. & St. L. R. R)	C. & M. V. R. R	768
Dudley	M. & P. R. R	709
Duvall's	Scioto V. R. R	714
Eagleville	A. & P. R. R	792
Earlville	C. & P. R. R	1,091
East Akron	V. R. R	967
East Liverpool	C. & P. R. R	693
Easton	C., T. V. & W. R. R	961
East Orwell	Ash. & P. R. R	937
East Rochester	Cin. & P. R. R	1,082
Eden	C., C., C. & I. R. R	975
Edgerton	L. S. & M. S. R. R	830
Edinburgh	Ash. & P. R. R	780
Edison	C., T. V. & W. R. R	689
Edwards	C. & H. V. R. R	756
Eldorado	P. C. & St. L. R. R	1,178
Elliottsville	Cin. & P. R. R	638
Ellis	C. & M. V. R. R	779

Station.	Authority.	Elevation.
		Feet.
Milton	N. Y., Pa. & O. R. R	1,193
Mineral City	M. & C. R. R	726
Mineral Ridge	N. Y., Pa. & O. R. R	970
Minerva	Cin. & P. R. R	1,052
Mingo	Cin. & P. R. R	687
Do	N. Y., Pa. & O. R. R	1,206
Monday Creek Station	C. & H. V. R. R	689
Monroe (summit)	D. & S. E. R. R	1,063
Monroeville	L. S. & M. S. R. R	725
Montgomery's	P., C. & St. L. R. R	800
Moonville	M. C. & C. R. R	723
Do ... Bench-mark on east abutment of bridge over Raccoon Creek, M. & C. R. R.	U. S. C. & G. S	713
Moorfield	C., C. C. & I. R. R	1,021
Morrison	C. N. R. R	882
Morrow	C. & M. V. R. R	666
Moultrie	Cin. & P. R. R	1,103
Mount Carmel	Cin. & P. R. R	899
Mount Liberty	C., Mt. V. & Del. R. R	1,215
Mount Summit	Cin. & P. R. R	885
Mount Vernon	B. & O. R. R	991
Mount Victory	C., C. C. & I. R. R	1,036
Mount Washington	Cin. & P. R. R	766
Munson Hill	Ash. & P. R. R	866
Nankin	N. Y. Pa. & O. R. R	1,123
Napoleon	T. W. & W. R. R	680
Navarre	C., T. V. & W. R. R	993
Do. (Lock)	O. & E. Canal	924
Nebo	Ash. & P. R. R	840
Nelsonville	C. & H. V. R. R	682
Newark	P. C. & St. L. R. R	819
Do. north end of city	B. & O. R. R	791
New Baltimore	B. P. & C. R. R	740
Newburgh	A. & G. W. R. R	813
Do .... grade crossing C. & P. R. R	A. & G. W. R. R	748
New Carlisle	I. B. & W. R. R	89
Newcastle (Lock)	O. & E. Canal	859
Newcomerstown	P., C. & St. L. R. R	796
Do ..... (Lock)	O. & E. Canal	800
New England	M. & C. R. R	808
New Haven	B. & O. R. R	918
New Holland	C. & Z. R. R	876
New Lexington	C. & M. V. R. R	897
New Lisbon	N. Y., Pa. & O. R. R	958
New London	C., C. C. & I. R. R	980
New Lyme	Ash., P. R. R	906
New Market	P., C. & St. L. R. R	959
New Paris	P., C. & St. L. R. R	1,020
New Philadelphia	C., T. V. & W. R. R	874
Do	Cin. & P. R. R	804
Newport	C., T. V. & W. R. R	870
New Portage	N. Y., Pa. & O. R. R	1,204
New Straitsville	C. & H. V. R. R	790
Newtown	P., C. & St. L. R. R	494
Niles	Ash. & P. R. R	864
Do	N. Y., Pa. & O. R. R	889
Niles Junction with N. & N. L. R. R	A. & G. W. R. R	890
North Bend	C., I. St. L. & C. R. R	497
North Eaton	C., C. C. & I. R. R	811
Northfield Summit	Cin. & P. R. R	1,043
North Lewisburgh	N. Y., Pa. & O. R. R	1,082
Norwalk	L. S. & M. S. R. R	719
Norwood	C. N. R. R	626
Oakfield	Ash. & P. R. R	912

Station.	Authority.	Elevation.
		Feet.
Oak Harbor	L. S. & M. S. R. R	596
Oberlin	L. S. & M. S. R. R	815
Odell, Lake	Toner	924
Oldtown	P., C. St. L. & P. R. R	834
Old Portage	O. & E. Canal	766
Olive Branch	Cin. & P. R. R	832
Olmstead Falls	L. S. & M. S. R. R	770
Do.....Geodetic Station	U. S. Lake Survey	794
Olmstead	C., C. C. & I. R. R	782
Oneida	Cin. & P. R. R	1,015
Ontario	N. Y., Pa. & O. R. R	1,377
Orangeville	A. & G. W. R. R	945
Orbiston	C. & H. V. R. R	698
Oreville	C. & H. V. R. R	730
Orrville	C., Mt. V. & Del. R. R	1,056
Do.crossing C. & Mt. V. R. R	P., Ft. W. & C. R. R	1,058
Orwell	N. C. & B. V. R. R	936
Osborn	C., C. C. & I. R. R	830
Osborne	N. Y., Pa. & O. R. R	829
Ostrander	C., C. C. & I. R. R	934
Ottawa	C., H. & D. R. R	713
Oxford	C., H. & D. R. R	918
Do	P., C. & St. L. R. R	793
Ozark	B. & S. W. R. R	1,265
Painesville	L. S. & M. S. R. R	650
Palestine	P., Ft. W. & C. R. R	1,014
Pasco	C., T. V. & W. R. R	731
Patterson	C., T. V. & W. R. R	771
Pauls	C., T. V. & W. R. R	439
Pemberton	C., C. C. & I. R. R	1,063
Pendleton	P. C. & St. L. R. R	519
Peninsula	V. R. R	699
Do...(Lock)	O. & E. Canal	703
Peoria	N. Y., Pa. & O. R. R	1,044
Perry	L. S. & M. S. R. R	707
Perrysburgh	C. H. & D. R. R	622
Petersburgh Coal Grove P. O	Scioto V. R. R	558
Pettisville	L. S. & M. S. R. R	753
Phalanx	A. & G. W. R. R	918
Pierce's	P. C. & St. L. R. R	1,029
Pike	N. Y., Pa. & O. R. R	982
Piketon	Scioto V. R. R	570
Pilcher	M. & C. R. R	874
Piqua	C., H. & D. R. R	918
Plainville	C. & Z. R. R	519
Do	P. C. & St. L. R. R	492
Pleasant Plains	M. & C. R. R	902
Pleasant Ridge	C. N. R. R	658
Plymouth	B. & O. R. R	993
Do	L. S. & M. S. R. R	854
Polk	N. Y., Pa. & O. R. R	1,241
Pond	A. & G. W. R. R	1,043
Pontiac	B. & O. R. R	763
Port Clinton	L. S. & M. S. R. R	581
Portland	Cin. & P. R. R	679
Portsmouth (S. V. Depot)	Scioto V. R. R	533
Do.....junction with M. & C. R. R	Scioto V. R. R	538
Do.....O. & R. R. R	Scioto V. R. R	538
Port Washington	P. C. & St. L. R. R	813
Do.....(Lock)	O. & E. Canal	824
Pottersburgh	N. Y., Pa. & O. R. R	1,093
Prouts	B. & O. R. R	708
Providence (Lock)	O. & E. Canal	637
Quakertown	Ash. & P. R. R	817

Station.	Authority.	Elevation.
		Feet.
Quincy	C., C. C. & I. R. R	1,050
Randall	A. & G. W. R. R	1,046
Ravenna	Cin. & P. R. R	1,103
Rawson	L. E. & L. R. R	821
Raysville	M. & C. R. R	636
Red Bank	P. C. & St. L. R. R	501
Reese's	Scioto V. R. R	735
Reeseville	C. & Z. R. R	1,086
Republic	B., P. & C. R. R	885
Richland	P., Ft. W. & C. R. R	1,201
Richmond	P. C. & St. L. R. R	968
Do	L. S. & M. S. R. R	1,114
Richwood	N. Y., Pa. & O. R. R	948
Ridgefield	B., P. & C. R. R	779
Ridgeway	C., C. C. & I. R. R	1,059
Rochester	C., C. C. & I. R. R	935
Rock Creek	Ash. & P. R. R	846
Rockport	L. S. & M. S. R. R	884
Do ..Geodetic Station	U. S. Lake Survey	781
Rock Run	P., C. & St. L. R. R	758
Robbins	N. Y., Pa. & O. R. R	982
Rome	Ash. & P. R. R	884
Rootstown	Cin. & P. R. R	1,123
Roseville	C. & Z. R. R	783
Royalton, Geodetic Station	U. S. Lake Survey	1,272
Rush Run	Cin. & P. R. R	679
Rushsylvania	C., C. C. & I. R. R	1,236
Russell	C., T. V. & W. R. R	969
Do..(C. T. V. & W. R. R crossing)	N. Y., Pa. & O. R. R	973
Russells	P., C. & St. L. R. R	501
Russia	C., C. C. & I. R. R	971
Sabina	C. & M. V. R. R	1,066
St. Marys	Miami Canal	864
Salem	M. & P. R. R	682
Do	P., Ft. W. & C. R. R	1,173
Salina	C. & H. V. R. R	659
Salinesville	Cin. & P. R. R	879
Salt Creek	D. & S. E. R. R	588
Sandusky, City base	City Engineer	587
Do....depot	L. S. & M. S. R. R	593
Do....depot	S., D. & C. R. R	598
Do....depot	B. & O. R. R	609
Do...Geodetic Station	U. S. Lake Survey	632
Do...Signal Station	U. S. Signal Office	639
Sargents	Scioto V. R. R	577
Saville	C., T. V. & W. R. R	986
Saybrook	L. S. & M. S. R. R	651
Schooleys	M. & C. R. R	666
Sciotoville (junction with M. & C. R. R)	Scioto V. R. R	546
Selma	P., C. & St. L. R. R	1,083
Seymours	Ash. & P. R. R	797
Shakerton	C. N. R. R	745
Sharon	C., C., C. & I. R. R	601
Sharonville	Scioto V. R. R	597
Shawville	L. S. & M. S. R. R	744
Shelby	B. & O. R. R	1,088
Do.Junction	B. & O. R. R	1,086
Shiloh	C., C., C. & I. R. R	1,080
Shoups	P., C. & St. L. R. R	831
Sidney	C., C., C. & I. R. R	969
Silver Creek	C., T. V. & W. R. R	948
Do	N. Y., Pa. & O. R. R	1,392
Do.....(summit)	D. & S. E. R. R	1,118
Silverton	C. N. R. R	825

Station.	Authority.	Elevation.
		Feet.
Skelleys Station	P., C. & St. L. R. R	841
Sligo	C. & Z. R. R	901
Smithfield	P., C. & St. L. R. R	773
Smithville	P., Ft. W. & C. R. R	1,122
Snyder	N. Y., Pa. & O. R. R	900
Solon	A. & G. W. R. R	1,041
Sonora	P., C. & St. L. R. R	1,039
South Charleston	P., C. & St. L. R. R	1,126
South Lebanon	C. & Z. R. R	652
Do	P., C. & St. L. R. R	628
Spafford	C., C., C. & I. R. R	1,033
Spencerville (Lock)	Miami Canal	847
Spences	M. & C. R. R	827
Springfield, Union Depot	P., C. & St. L. R. R	991
Spring Mill	B. & O. R. R	1,176
Spring Valley	P., C. & St. L. R. R	758
Stanley	B., P. & C. R. R	731
Do	M. & P. R. R	629
Standing Stone	B. & S. W. R. R	904
Steubenville	Cin. & P. R. R. R	679
Do.....Washington Street	P., C. & St. L. R. R	728
Stillwater	C., T. V. & W. R. R	863
Do... Junction	P., C. & St. L. R. R	791
Stiles	Cin. & P. R. R	503
Stony Creek	Scioto V. R. R	597
Stouts	C. & Z. R. R	1,008
Strasburgh	P., Ft. W. & C. R. R	1,187
Strausburgh	C., T. V. & W. R. R	917
Struthers	Ash. & P. R. R	836
Stryker	L. S. & M. S. R. R	715
Styx River, surface water	N. Y., Pa. & O. R. R	1,169
Sugar Grove	C. & H. V. R. R	769
Sullivant's	P., C. & St. L. R. R	834
Suman	B., P. & C. R. R	747
Sunbury	C., Mt. V. & Del. R. R	970
Swanton	L. S. & M. S. R. R	684
Sylvania	L. S. & M. S. R. R	652
Tallmadge	N. Y., Pa. & O. R. R	1,333
Teegardin	N. Y., Pa. & O. R. R	1,043
Terrace Park	P., C. & St. L. R. R	555
Texas (Lock)	O. & E. Canal	662
Thompson, Geodetic Station	U. S. Lake Survey	1,307
Thorn Hill	A. & G. W. R. R	869
Three Locks	Scioto V. R. R	617
Tiffin	B., P. & C. R. R	759
Tippecanoe	C., H. & D. R. R	843
Toledo	O. Cent. R. R	583
Do. Union depot	L. S. & M. S. R. R	580
Do. Air Line Junction	L. S. & M. S. R. R	611
Do. Lake Erie	W., St. L. & P. R. R	573
Do. (Lock 1, surface of water)	O. & E. Canal	580
Do. (Lock 2)	O. & E. Canal	588
Do. (Lock 3)	O. & E. Canal	596
Do. (Lock 4)	O. & E. Canal	605
Do. (Lock 5)	O. & E. Canal	613
Do. low water of Maumee River	W. & E. Canal	573
Do. Signal Station	U. S. Signal Office	651
Tontogany	C., H. & D. R. R	652
Torch	M. & C. R. R	723
Toronto	Cin. & P. R. R	698
Townsend, Geodetic Station	U. S. Lake Survey	923
Trenton	P., C. & St. L. R. R	833
Do. (Lock 15)	O. & E. Canal	849
Do. (Lock 16)	O. & E. Canal	841

Station.	Authority.	Elevation.
		Feet.
Trotwood	P., C. & St. L. R. R	844
Troy	C., H. & D. R. R	850
Do. Canal	Miami Canal	830
Do. Crossing Dayton & Mich. R.R.	I., B. & W. R. R	847
Tuscarawas	C., T. V. & W. R. R	827
Uhrichsville	P., C. & St. L. R. R	863
Undercliff	P., C. & St. L. R. R	495
Union Mills Junction	B., P. & C. R. R	759
Unionport	P., C. & St. L. R. R	946
Uniontown	V. R. R	1,073
Unionville	L. S. & M. S. R. R	704
Urbana, C. S. & C. and P. C. O. & S. & L. R. R. crossing	N. Y., Pa. & O. R. R	1,030
Utica	C. N. R. R	974
Valley Junction	C., I., St. L. & C. R. R	499
Van Wert	P., Ft. W. & C. R. R	784
Venice	L. S. & M. S. R. R	585
Vermillion	L. S. & M. S. R. R	596
Vernon	C., C., C. & I. R. R	1,127
Versailles	C., C., C. & I. R. R	977
Vienna	M. & C. R. R	1,130
Vienna Junction	N. Y., Pa. & O. R. R	869
Vincent	M. & C. R. R	774
Wade	Cin. & P. R. R	495
Wadsworth	N. Y., Pa. & O. R. R	1,349
Wakeman	L. S. & M. S. R. R	862
Walkerton Junction	B., P. & C. R. R	719
Wapakoneta	C. H. & D. R.	876
Warren	Ash. & P. R. R	875
Do	M. & C. R. R	671
Warrensville, Geodetic Station	U. S. Lake Survey	1,214
Warwick	C., T. V. & W. R. R	958
Washington C. H	C. & Z. R. R	983
Do	T. W. & W. R. R	660
Washingtonville	N. Y., Pa. & O. R. R	1,059
Wauseon	L. S. & M. S. R. R	768
Waverly Depot	Scioto V. R. R	574
Wayne	C. & Z. R. R	764
Waynesburgh	Cin. & P. R. R	981
Weavers	P., C. & St. L. R .R	977
Wegee	B. & S. W. R. R	645
Wellston	D. & S. E. R. R	738
Wellsville	Cin. & P. R. R	688
Do	Cin. & P. R. R	845
West Chester	C., C., C. & I. R. R	745
Westerville	C., Mt. V. & Del. R. R	875
West Jefferson	P., C., & St. L. R. R	908
West Lafayette	P., C. & St. L. R. R	803
West Liberty	S. D. & C. R. R	1,099
Weston	C., H. & D. R. R	666
West Salem	N. Y., Pa. & O. R. R	1,095
West Wheeling	C., T. V. & W. R. R	648
Do .....low water in Ohio River	C., T. V. & W. R. R	618
Wetmore	Scioto V. R. R	558
Wheeler	C. N. R. R	875
Wheelersburgh	Scioto V. R. R	540
Whipple	M. P. R. R	656
White House	T., W. & W. R. R	653
Whites Mill	B., P. & C. R. R	717
Wickliffe	L. S. & M. S. R. R	657
Williamsport	C. & M. V. R. R	783
Willington	C., C., C. & I. R. R	855
Willoughby	L. S. & M. S. R. R	635
Do.....Geodetic Station	U. S. Lake Survey	613

Station.	Authority.	Elevation.
		Feet.
Skelleys Station	P., C. & St. L. R. R	841
Sligo	C. & Z. R. R	901
Smithfield	P., C. & St. L. R. R	773
Smithville	P., Ft. W. & C. R. R	1,122
Snyder	N. Y., Pa. & O. R. R	900
Solon	A. & G. W. R. R	1,041
Sonora	P., C. & St. L. R. R	1,039
South Charleston	P., C. & St. L. R. R	1,126
South Lebanon	C. & Z. R. R	652
Do	P., C. & St. L. R. R	628
Spafford	C., C., C. & I. R. R	1,033
Spencerville (Lock)	Miami Canal	847
Spences	M. & C. R. R	827
Springfield, Union Depot	P., C. & St. L. R. R	991
Spring Mill	B. & O. R. R	1,176
Spring Valley	P., C. & St. L. R. R	758
Stanley	B., P. & C. R. R	731
Do	M. & P. R. R	629
Standing Stone	B. & S. W. R. R	904
Steubenville	Cin. & P. R. R. R	679
Do.....Washington Street	P., C. & St. L. R. R	728
Stillwater	C., T. V. & W. R. R	863
Do... Junction	P., C. & St. L. R. R	791
Stiles	Cin. & P. R. R	503
Stony Creek	Scioto V. R. R	597
Stouts	C. & Z. R. R	1,008
Strasburgh	P., Ft. W. & C. R. R	1,187
Strausburgh	C., T. V. & W. R. R	917
Struthers	Ash. & P. R. R	836
Stryker	L. S. & M. S. R. R	715
Styx River, surface water	N. Y., Pa. & O. R. R	1,169
Sugar Grove	C. & H. V. R. R	769
Sullivant's	P., C. & St. L. R. R	834
Suman	B., P. & C. R. R	747
Sunbury	C., Mt. V. & Del. R. R	970
Swanton	L. S. & M. S. R. R	684
Sylvania	L. S. & M. S. R. R	652
Tallmadge	N. Y., Pa. & O. R. R	1,333
Teegardin	N. Y., Pa. & O. R. R	1,043
Terrace Park	P., C. & St. L. R. R	555
Texas (Lock)	O. & E. Canal	662
Thompson, Geodetic Station	U. S. Lake Survey	1,307
Thorn Hill	A. & G. W. R. R	869
Three Locks	Scioto V. R. R	617
Tiffin	B., P. & C. R. R	759
Tippecanoe	C., H. & D. R. R	843
Toledo	O. Cent. R. R	583
Do. Union depot	L. S. & M. S. R. R	580
Do. Air Line Junction	L. S. & M. S. R. R	611
Do. Lake Erie	W., St. L. & P. R. R	573
Do. (Lock 1, surface of water)	O. & E. Canal	580
Do. (Lock 2)	O. & E. Canal	588
Do. (Lock 3)	O. & E. Canal	596
Do. (Lock 4)	O. & E. Canal	605
Do. (Lock 5)	O. & E. Canal	613
Do. low water of Maumee River	W. & E. Canal	573
Do. Signal Station	U. S. Signal Office	651
Tontogany	C., H. & D. R. R	652
Torch	M. & C. R. R	723
Toronto	Cin. & P. R. R	698
Townsend, Geodetic Station	U. S. Lake Survey	923
Trenton	P., C. & St. L. R. R	833
Do. (Lock 15)	O. & E. Canal	849
Do. (Lock 16)	O. & E. Canal	841

OREGON.

Station.	Authority.	Elevation.
		Feet.
Albany	Oregon & Cal. R. R	238
Albany Junction	A. & L. R. R	249
Albert Lake	Wheeler	4,209
Alkali	N. P. R. R	232
Amity	W. & O. & O. C. R. R	183
Antelope P. O	Wheeler	2,845
Astoria	Med. Dept. U. S. A	50
Auburn	Smithsonian Inst	3,300
Aurora	Oreg. & Cal. R. R	218
Baker City	Oreg. R. R. & Nav. Co	3,418
Barnum's Ranch	Wheeler	1,795
Beaverton	W. & O. & O. C. R. R	212
Big Meadows	Wheeler	4,124
Big Spring	Wheeler	4,553
Big Summit Prairie	Wheeler	5,124
Bonneville	N. P. R. R	60
Box Elder Mountain	Wheeler	9,541
Brattons Ranch	Wheeler	4,495
Bridal Veil	N. P. R. R	46
Burnt Ranch, John Day River	Wheeler	1,561
Button's Ranch	Wheeler	4,237
Camar	Powell	44
Cameron, Fort	Wheeler	6,057
Canby	Oreg. & Cal. R. R	175
Cañonville	Pacific R. R. Reports	516
Carlton	W. & O. & O. C. R. R	222
Carmical's Ranch	Wheeler	2,736
Cascade Range, Timber line on		7,000
Cedarville Pass	Wheeler	6,356
Cedarville Peak Valley	Wheeler	8,308
Cedarville, Surprise Valley	Wheeler	4,675
Celilo	Oreg. R. R. & Nav. Co	142
Do	N. P. R. R	160
Chewaucan Marsh	Wheeler	4,336
Clackamas	Oreg. & Cal. R. R	134
Clarnie	N. P. R. R	214
Columbia City	N. P. R. R	90
Cornelius	W. & O. & O. C. R. R	200
Corral Springs	Wheeler	4,569
Corvallis	W. & O. & O. C. R. R	253
Cottage Springs	Wheeler	5,718
Coyote	Powell	257
Crater Lake	Wheeler	7,143
Creswell	Oreg. & Cal. R. R	565
Cross Hollows	Wheeler	3,197
Currant Creek, stage station	Wheeler	2,142
Currin's Ranch		532
Curry Spring	Wheeler	4,273
Dallas	Wheeler	135
Dalles, The	N. P. R. R	106
Do	Oreg. R. R. & Nav. Co	77
Dayton Junction	Oreg. R. R. & Nav. Co	1,141
Derry	W. & O. & O. C. R. R	214
Deschutte's Bridge	Wheeler	166
Deschutte's River Bridge	Wheeler	2,563
Diamond Peak	Wheeler	8,807
Dillard & Renshaw's Ranch	Wheeler	4,657
Dilley	W. & O. & O. C. R. R	217

Station.	Authority.	Elevation.
		Feet.
Wilmington	C. & M. V. R. R	1,017
Winchester	C. & H. V. R. R	771
Windham	N. Y., Pa. & O. R. R	964
Windsor	N. Y., Pa. & O. R. R	1,067
Winona	C. & H. V. R. R	743
Woodburn	P. C. & St. L. R. R	533
Woodland	N. Y., Pa. & O. R. R	950
Do	P., Ft. W. & C. R. R	1,245
Woodsfield	B. & S. W. R. R	1,173
Xenia	P., C. & St. L. R. R	928
Yellow Creek	O. & E. Canal	758
Yellow Springs	P., C. & St. L. R. R	978
York	C., T. V. & W. R. R	
Youngstown	A. & G. W. R. R	863
Zaleski	M. & Co. R. R	721
Zanesville	C. & M. V. R. R	74[illegible]
Zoar	Cin. & P. R. R	88[illegible]
Zoar Mills (lock)	O. & E. Canal	8[illegible]

Station.	Authority.	Elevation.
		Feet.
Mule Spring	Wheeler	4,739
Mutton, Mount	Wheeler	3,693
Neenee Spring	Wheeler	2,914
North End Mountain	Wheeler	8,471
North Twin-lake	Wheeler	5,117
North Sands	U. S. C. & G. S	5
North Yamhill	W. & O. & O. C. R. R	204
Oak Grove	Wheeler	2,415
Oakland	Oreg. & Cal. R. R	450
Okanagon, Fort	Toner	810
Oregon City	Oreg. & Cal. R. R	99
Orford, Fort	Med. Dept., U. S. A	50
Parker	W. & O. & O. C. R. R	234
Parrish Ranch	Wheeler	3,330
Parton's Ranch (Summer Lake)	Wheeler	4,498
Pauline Peak	Wheeler	7,387
Pendleton	Oreg. R. R. & Nav. Co	1,043
Pigeon	U. S. C. &. G. S	24
Pigeon Point	U. S. C. &. G. S	8
Pitt, Mount	Wheeler	9,818
Portland	Smithsonian Institution	150
Do	W. & O. & O. C. R. R	53
Do	N. P. R. R	43
Do (opposite)	Pacific R. R. Reports	66
Do Fourth street bridge		190
Do Signal Station	U. S. Signal Office	67
Prineville	Wheeler	2,899
Quinns	N. P. R. R	236
Reedville	W. & O. & O. C. R. R	253
Roseburgh	Oreg. & Cal. R. R	485
Do Signal Station	U. S. Signal Office	537
Round Lake		4,671
St. Joseph	W. & O. & O. C. R. R	158
Salem	Oreg. & Cal. R. R	187
Scott, Mount	Wheeler	9,016
Shivar's Bridge, Deschutes River	Wheeler	702
Sikan Marsh	Wheeler	4,960
Six Bit House		1,151
Skiff	U. S. C. & G. S	37
Stalco	N. P. R. R	48
Stampede Lake	Wallen	4,196
Sugar Loaf Mountain	Wheeler	8,415
Summit Pass	Pacific R. R. Reports	5,595
Tangent	Oreg. & Cal. R. R	269
Timber, Mount	Wheeler	7,519
Troutdale	N. P. R. R	60
Turner	Oreg. & Cal. R. R	310
Tygh Valley	Wheeler	1,089
Umatilla	Oreg. R. R. & Nav. R. R	277
Umatilla Junction	N. P. R. R	302
Umatilla, Signal Station	U. S. Signal Office	384
Umpqua, Fort	Med. Dept., U. S. A	8
Union	Oreg. R. R. & Nav. Co	2,793
Union Peak	Wheeler	7,298
Upper Cascades	Wheeler	127
Upper Klamath		4,131
Vancouver (opposite)	Pacific R. R. Reports	105
Vicuto	N. P. R. R	104
Wallamet	Smithsonian Institution	120
Warm Spring Agency	Wheeler	1,574
Warm Spring Indian Agency	Wheeler	1,513
Warm Springs	Wheeler	1,529
Warner, Camp	Wheeler	5,730

Station.	Authority.	Elevation.
		Feet.
Warner Lake Flat	Wheeler	4,544
Watumpi Lake		4,287
Wells	W. & O. & P. O. C. R. R.	247
Willows	N. P. R. R.	234
Woodland	U. S. C. & G. S	107

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Station.	Authority.	Elevation.
		Feet.
Abingdon Junction	N. Pa. R. R	254
Do	N. E. Pa. R. R	295
Abington	Del. L. & W. R. R	1,058
Ackley's	D., A. V. & P. R. R	1,226
Adamsville	A. & G. W. R. R	1,148
Aladdin Station	A. V. R. R	6,793
Alba	N. C. R. R	1,349
Albion	E. & P. R. R	857
Alburtis	C. R. R	445
Allegheny	Pa. R. R	1,152
Allegheny City	P., Ft. W. & C. R. R	738
Do ....Sycamore street	W. Pa. R. R	741
Do ....East Lane		741
Allentown, B. M. at	U. S. C. & G. S	321
Allentown	L. & S. R. R	257
Allenville	M. R. R	1,647
Allenwood	C. & W. R. R	482
Alligripus	Pa. R. R	1,920
Alpsville	B. & O. R. R	768
Alton	N. Y., L. E. & W. R. R	2,082
Alton Summit	N. Y., L. E. & W. R. R	2,140
Altoona	Pa. R. R	1,179
Do. W. line of ticket office	Pa. R. R	1,178
Do. front door of ticket office	Pa. R. R	1,181
Ambler	N. Pa. R. R	199
Anderson's	Pa. R. R	500
Do....water station	Pa. R. R	499
Andover	L. S. & M. S. R. R	1,095
Angora	W. C. & P. R. R	745
Annville	Lebanon Valley R. R	442
Apollo	W. Pa. R. R	823
Apple's brick house	S. & N. R. R	558
Aqueduct	Pa. R. R	377
Ararat Summit	N. Y., L. E. & W. R. R	2,023
Archbald	L. R. R	968
Ardmore	Pa. R. R	359
Argyle	P. & K. C. R. R	1,161
Armstrong's Coal Mines	B. & O. R. R	779
Armstrong Station	A. V. R. R	746
Arnold's Station	A. V. R. R	793
Arnot	Tioga R. R	1,682
Ashland	N. C. R. R	269
Ashland Depot	M. & S. R. R	859
Ashley	L. & S. R. R	634
Ashtabula	N. C. & B. V. R. R	683
Athens Bridge	Lehigh Valley R. R	779
Athens Mills	P. & P. R. R	1,266
Auburn	Phil. & R. R. R	471
Auburn Junction	S. & S. R. R	466
Austinburgh	N. C. & B. V. R. R	815
Avery	M. R. R	979
Avon	Lebanon Valley R. R	487
Avondale	P. & B. C. R. R	227
Do...crossing P. & B. C. R. R	Pa. & Del. R. R	2,821
Do...opposite center of coal office	Del., L. & W. R. R	520
Babcock	N. Y., L. E. & W. R. R	1,427
Baden	P., Ft. W. & C. R. R	710
Bailey's Run	W. Pa. R. R	753

Station.	Authority.	Elevation.
		Feet.
Baily's	Pa. R. R	387
Bainbridge	Pa. R. R	271
Bair's	Pa. R. R	452
Baker's	S. & M. P. R. R	1,889
Bald Eagle Railroad Junction	B. & S. S. R. R	722
Do	T. & C. R. R	969
Baldwin's	Chester Valley R. R	299
Banning's	B. & O. R. R	804
Barnestown	E. B. & W. R. R	486
Barnesville	C. & W. R. R	1,064
Barnet Mine	H. & B. T. R. R	1,388
Barre Forge	Pa. R. R	724
Barton	S. C. R. R	804
Bath	L. & L. R. R	423
Baumgardner's Station	L. & Q. R. R	384
Baxter's	Bennett's Br. R. R	1,206
Beach Haven	Del., L. & W. R. R	530
Beaghley's	Berlin R. R	2,010
Bear Lake	A. & G. W. R. R	1,550
Beatty's Station	Pa. R. R	1,073
Beaver	Cleve. & P. R. R	711
Beaver, at Ohio River	Levels	666
Beaver Co. Collieries, New Castle	N. C. & B. V. R. R	793
Do ....Brier Hill, Mahoning Valley	N. C. & B. V. R. R	929
Do ....Hattenburgh, Lower Vein	N. C. & B. V. R. R	1,093
Do ....Sandy Lake	N. C. & B. V. R. R	1,313
Do ....Sandy Lake, Lower Vein		1,113
Beaver Dam	W. & R. R. R	603
Beaver Falls	P., Ft. W. & C. R. R	771
Beaver Valley water-tank	C. & W. R. R	924
Bechtelsville	C. R. R	401
Bedford	Bed. & Bridge. R. R	1,062
Beechwood	P. & E. R. R	1,244
Beersville	E. Broadtop R. R	658
Bellefonte	Bellefonte Branch R. R	744
Belle Valley	P. & E. R. R	1,007
Bellevue	P., Ft. W. & C. R. R	728
Bell's Mills	Bennett's Br. R. R	1,268
Bell's Mills Junction	B. G. R. R	1,060
Belmont	Phil. & R. R. R	49
Benezette	Bennett's Br. R. R	1,040
Bennett	W. Pa. R. R	741
Bennett Station	Del., L. & W. R. R	553
Bennington Furnace	Pa. R. R	2,038
Berlin	Berlin R. R	2,176
Bernice	S. L. & S. R. R	1,858
Berwick	Del., L. & W. R. R	505
Bethany	S. W. Pa. R. R	1,051
Bethayer's Station, $\frac{4}{10}$ mile from junction	N. Pa. R. R	144
Bethlehem	Lehigh Valley R. R	235
Bethlehem Junction	L. & L. R. R	240
Biehl	L. C. & S. C. R. R	518
Bigler	T. & C. R. R	1,662
Big Shanty	N. Y., L. E. & W. R. R	1,730
Bird-in-Hand	Pa. R. R	359
Birdsborough	Phila. & R. R. R	173
Birmingham	Pa. R. R	866
Do	P., C. & St. L. R. R	766
Do....bridge	B. & O. R. R	751
Do....12th street	P. V. & C. R. R	802
Do....18th street	P. V. & C. R. R	795

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Station.	Authority.	Elevation.
		Feet.
Abingdon Junction	N. Pa. R. R	254
Do	N. E. Pa. R. R	295
Abington	Del. L. & W. R. R	1,058
Ackley's	D., A. V. & P. R. R	1,236
Adamsville	A. & G. W. R. R	1,148
Aladdin Station	A. V. R. R	6,793
Alba	N. C. R. R	1,349
Albion	E. & P. R. R	857
Alburtis	C. R. R	445
Allegheny	Pa. R. R	1,152
Allegheny City	P., Ft. W. & C. R. R	738
Do ....Sycamore street	W. Pa. R. R	741
Do ....East Lane		741
Allentown, B. M. at	U. S. C. & G. S	321
Allentown	L. & S. R. R	257
Allenville	M. R. R	1,647
Allenwood	C. & W. R. R	482
Alligripus	Pa. R. R	1,920
Alpsville	B. & O. R. R	768
Alton	N. Y., L. E. & W. R. R	2,082
Alton Summit	N. Y., L. E. & W. R. R	2,140
Altoona	Pa. R. R	1,179
Do. W. line of ticket office	Pa. R. R	1,178
Do. front door of ticket office	Pa. R. R	1,181
Ambler	N. Pa. R. R	199
Anderson's	Pa. R. R	500
Do....water station	Pa. R. R	499
Andover	L. S. & M. S. R. R	1,095
Angora	W. C. & P. R. R	745
Annville	Lebanon Valley R. R	442
Apollo	W. Pa. R. R	823
Apple's brick house	S. & N. R. R	558
Aqueduct	Pa. R. R	377
Ararat Summit	N. Y., L. E. & W. R. R	2,023
Archbald	L. R. R	968
Ardmore	Pa. R. R	359
Argyle	P. & K. C. R. R	1,161
Armstrong's Coal Mines	B. & O. R. R	779
Armstrong Station	A. V. R. R	746
Arnold's Station	A. V. R. R	793
Arnot	Tioga R. R	1,682
Ashland	N. C. R. R	269
Ashland Depot	M. & S. R. R	859
Ashley	L. & S. R. R	634
Ashtabula	N. C. & B. V. R. R	683
Athens Bridge	Lehigh Valley R. R	779
Athens Mills	P. & P. R. R	1,266
Auburn	Phil. & R. R. R	471
Auburn Junction	S. & S. R. R	466
Austinburgh	N. C. & B. V. R. R	815
Avery	M. R. R	979
Avon	Lebanon Valley R. R	487
Avondale	P. & B. C. R. R	227
Do...crossing P. & B. C. R. R	Pa. & Del. R. R	2,821
Do...opposite center of coal office	Del., L. & W. R. R	530
Babcock	N. Y., L. E. & W. R. R	1,427
Baden	P., Ft. W. & C. R. R	710
Bailey's Run	W. Pa. R. R	753

Station.	Authority.	Elevation.
		Feet.
Brownsville at Monongahela River	Cumberland Turnpike	873
Bruce, bench-mark	P. B. R. R	331
Bruckhart's	R. & C. R. R	425
Brush Run	Pa. R. R	933
Brushton Station	Pa. R. R	922
Bryansville	P. B. R. R	241
Bryn Mawr	Pa. R. R	416
Buchanan's	E. B. & W. R. R	672
Buchannon	L. C. & S. C. R. R	1,059
Buck Mountain	L. & S. R. R	1,620
Buffalo Station	W. Pa. R. R	766
Bulger	P. C. & St. L. R. R	1,156
Bunker Hill	L. & T. R. R	437
Do	N. Pa. R. R	528
Bunkertown	S. & N. R. R	706
Burgettstown	P. C. & St. L. R. R	1,011
Burkholder	Berlin R. R	1,992
Burning Well Station, cor. of coping, lower end, N. arch culvert, above Burning Well Station	A. V. R. R	945
Bushore	S., L. & S. R. R	1,593
Butler	W. Pa. R. R	1,008
Butler Junction	W. Pa. R. R	769
Butteville	N. Y., R. & P. R. R	1,996
Cabean's Station	L. & Q. R. R	389
Caledonia Tunnel, E. end	Bennett's Br. R. R	1,148
Caln	Pa. R. R	359
Cambria	Pickering Valley R. R	322
Cambridge	A. & G. W. R. R	1,163
Do	P. & P. R. R	1,158
Camden	P. V. & C. R. R	754
Cameron	P. & E. R. R	964
Do	Del., L. & W. R. R	458
Campbelltown	J. S., P. C. & B. R. R	700
Camp Ground Station	A. V. R. R	789
Camp Hill	N. Pa. R. R	178
Camp Hummel	T. & C. R. R	1,682
Canaan	Pa. R. R	1,066
Cannansburg	Chartiers R. R	935
Cantner	S. & M. P. R. R	2,108
Canton	N. C. R. R	1,261
Carbondale	N. Y., L. E. & W. R. R	1,079
Do.....Coal Brooke Breaker	L. R. R	1,086
Do.....Canal level		965
Carlisle	Cumberland Valley R. R	477
Do.B. M. on base of column west side of jail entrance	U. S. C. & G. S	473
Carlton	A. & G. W. R. R	1,047
Carpenter's	N. C. R. R	1,201
Carpenter's Station	Pa. R. R	854
Castleman	B. & O. R. R	1,757
Catasauqua	Lehigh Valley R. R	282
Catawissa	C. & W. R. R	477
Do	D., H. & W. R. R	470
Catfish	Pa. R. R	968
Catfish Station, door sill telegraph office, south side	A. V. R. R	859
Cedar Hollow	Chester Valley R. R	246
Central Point	P. & K. C. R. R	1,184
Centre Hall	L. C. & S. C. R. R	1,272
Centreville	Chester Valley R. R	202
Do	P. F. & B. R. R	1,297
Chadd's Ford	P. & B. C. R. R	129
Do	W. & R. R. R	175

Station.	Authority.	Elevation.
		Feet.
Chambersburg	Cumberland Valley R. R	618
Do.....B. M. on base north pillar front court-house	U. S. C. & G. S	620
Chapman	C. & F. R. R	541
Chapmansville	L. & L. R. R	576
Chartier's Station	A. V. R. R	765
Cheney	W. C. & P. R. R	240
Chester Heights	P. & B. C. R. R	234
Chester Springs	Pickering Valley R. R	278
Chestnut Hill	Phil. & R. R. R	410
Childs	B., C. & P. R. R	1,474
Chiques	Pa. R. R	255
Do. Bridge	Pa. R. R	351
Christiana	Pa. R. R	491
Chulasky	Del., L. & W. R. R	455
Churchville	Phil. & N. R. R	184
City Farm	B. & O. R. R	761
Clarendon	P. & E. R. R	1,396
Clarion Summit	P. & E. R. R	2,024
Clark's	L. S. & M. S. R. R	1,164
Clark's Ferry	N. C. R. R	366
Clarksville	E. & P. R. R	894
Claysville	B. & O. R. R	1,143
Clearfield	T. & C. R. R	1,103
Clearfield Creek	T. & C. R. R	1,140
Clermont, Bishop's Summit	McK. & B. R. R	2,074
Clifton	W. C. & P. R. R	109
Clinton	N. C. & B. V. R. R	900
Clyde	L. & L. R. R	362
Coal Branch	L. S. & M. S. R. R	1,199
Do.....Crossing	N. C. & F. R. R	1,194
Coaldale	H. & B. T. R. R	1,126
Coalmont	H. & B. T. R. R	1,110
Coal Port	L. & S. R. R	585
Coatesville	W. & R. R. R	315
Do....intersection of W. & R. R. R	Pa. R. R	380
Cobham	P. T. & B. R. R	1,134
Coburn	L. C. & S. C. R. R	1,026
Cochranton	A. & G. W. R. R	1,064
Coffee Run	H. & B. T. R. R	872
Cohocksink	N. Pa. R. R	34
Cold Run	W. & R. R. R	525
Cold Spring	S. & S. R. R	874
Colebrookdale	C. R. R	316
Coledale	L. & S. R. R	962
Colegrove	McK. & B. R. R	1,543
Coleman Station	A. V. R. R	746
Cole's Station	E. Broadtop R. R	1,359
Collegeville	Perkiomen R. R	155
Collier	B. G. R. R	1,642
Collins	Pa. R. R	285
Columbia	P. T. & B. R. R	1,067
Do...Cross Roads	N. C. R. R	1,148
Columbia	Pa. R. R	251
Do...Junction Col. Br. of Pa. R. R	York Br. Pa., R. R	251
Do...Mill St	R. & C. R. R	264
Do...Col. Depot	R. & C. R. R	250
Do...Pa. R. R. Depot	C. & P. D. R. R	251
Do...Pa. R. R. track in front of passenger station	C. & P. D. R. R	241
Columbus	A. & G. W. R. R	1,427
Do	P. & E. R. R	1,401
Concord	P. & B. C. R. R	237
Do	A. & G. W. R. R	1,361

Station.	Authority.	Elevation.
		Feet.
Concord	P. & E. R. R	1,384
Conemaugh	Pa. R. R	1,225
Do.....Furnace	Pa. R. R	1,135
Conestoga	W. & R. R. R	647
Conewago	Pa. R. R	429
Do...Bridge	Pa. R. R	546
Confluence	B. & O. R. R	1,346
Connantsville	E. & P. R. R	1,066
Conneaut Pool	Levels	1,082
Connellsville	P. & C. R. R	894
Do	S. W. Pa. R. R	915
Do..S. W. Pa. R. R	B. & O. R. R	894
Conshohocken	Phil. & R. R. R	59
Cook's	Chartier's R. R	1,003
Cook's Mills	B. & O. R. R	774
Cook's Run	P. & E. R. R	709
Cook's Station	E. Broadtop R. R	1,541
Cools	M. R. R	1,547
Cool Spring	S. & A. R. R	1,127
Coopersburg	N. Pa. R. R	549
Copeland Station	Pa. R. R	853
Coplay	Lehigh Valley R. R	296
Copper Works	B. & O. R. R	763
Cornog's	E., B. & W. R. R	361
Cornwall	L. & C. R. R	603
Cornwall's	Phil. & T. R. R	39
Corry	P. & E. R. R	1,431
Do.grade crossing P. & E. R. R	A. & G. W. R. R	1,428
Corry Junction	B., C. & P. R. R	1,423
Do.junction with P. & E. R. R	P., T. & B. R. R	1,433
Do.junction with B., C. & P. R. R	P., T. & B. R. R	1,445
Do.crossing first avenue	P., T. & B. R. R	1,439
Do.crossing Centre street	P., T. & B. R. R	1,434
Do.crossing P., E. & A. G. W. R. R	P., T. & B. R. R	1,431
Do.Station	A. & G. W. R. R	1,431
Do.grade crossing B., C. & P. R. R	A. & G. W. R. R	1,443
Coudersport	J. S., P. C. & B. R. R	1,661
Coulson	N. C. & F. R. R	1,277
Coultersville	B. & O. R. R	768
Cove	H. & B. T. R. R	921
Covert's Mills	N. C. & B. V. R. R	790
Covington	Tioga R. R	1,208
Cowanshannock Station	A. V. R. R	809
Crafton	P. C. & St. L. R. R	879
Crawford	H. & B. T. R. R	1,242
Do	N. Y., L. E. & W. R. R	2,098
Crawford's	A. & G. W. R. R	893
Crescentville	Phil. & N. R. R	95
Cresson	Pa. R. R	2,017
Do.R. R. Junction	E. & C. R. R	2,028
Do.switch to E. & C. R. R	Pa. R. R	2,028
Crosby	McK. & B. R. R	1,540
Crosses	E. & P. R. R	765
Cross Road	S. B. R. R	662
Cumbola	Schuylkill Valley R. R	668
Cupola	E. B. & W. R. R	565
Curwensville	T. & C. R. R	1,141
Daguschahonda	P. & E. R. R	1,480
Dahoga	P. & E. R. R	1,60[illegible]
Dallastown	P. B. R. R	65[illegible]
Dam	E. & C. R. R	1,960
Dampman's	E. B. & W. R. R	62[illegible]
Danville	C. & W. R. R	49[illegible]
Do	D., H. & W. R. R	46[illegible]

Station.	Authority.	Elevation.
		Feet.
Danville, N. E. end depot, top of near rail	Del., L. & W. R. R	457
Darby	P., W. & B. R. R	45
Darby Road	W. C. & P. R. R	103
Darlington	P., Ft. W. & C. R. R	981
Do	W. C. & P. R. R	143
Dauphin, east end R. R. bridge	N. C. R. R	349
Do...center of passenger station	N. C. R. R	349
Davidson	S. W. Pa. R. R	898
Dawson	P., T. & B. R. R	1,076
Do..H. R. Br. R. R	B. & O. R. R	864
De Golias	N. Y., L. E. & W. R. R	1,523
Delano Station	W. Pa. R. R	1,224
Delaware Water Gap	Del., L. & W. R. R	319
Delta	P. B. R. R	435
Dent's Run Station	Bennett's Br. R. R	926
Derry	Pa. R. R	1,172
Dewart	P. & E. R. R	485
Dilk's Station	W. Pa. R. R	1,307
Dilleville Junction, Col. Branch	Pa. R. R	359
Dillsburgh	M. & D. R. R	542
Do....Junction	Cumberland Valley R. R	427
Dimock	M. R. R	1,507
Dinsmore	P., C. & St. L. R. R	1,059
Dixmont	P., Ft. W. & C. R. R	722
Doe Run	Pa. & Del. R. R	374
Donaldson	L. & T. R. R	910
Dorlans	E. B. & W. R. R	280
Dormers	M. C. R. R	647
Dotter's Station	A. V. R. R	915
Douglassville	Phil. & R. R. R	161
Dowlins Forge	E. B. & W. R. R	274
Downington	Pa. R. R	266
Do.....terminus junction with N. track of Pa. R. R	E. B. & W. R. R	256
Doylestown	N. Pa. R. R	347
Drehersville	L. Schuyl. R. R	494
Drifton	L. & S. R. R	1,633
Driftwood	P. & E. R. R	816
Do...junction with P. & E. R. R	Bennett's Br. R. R	813
Dunbar	P. & C. R. R	1,011
Do	T. & C. R. R	1,453
Duncan	L. C. & S. C. R. R	1,078
Duncannon	Pa. R. R	356
Duncansville	Pa. R. R	990
Dunning's	Del., L. & W. R. R	1,400
Dunn's Eddy	P., T. & B. R. R	1,156
Duquesne Borough	W. P. R. R	741
Durbin	E. & C. R. R	1,927
Eagle Hill	Schuylkill Valley R. R	661
Eagle Rock	P., T. & B. R. R	1,046
Eagleville	B. E. Valley R. R	635
Eastbrook	N. C. & F. R. R	906
East Falls	Phil. & R. R. R	119
East Greenburgh	S. W. Pa. R. R	1,062
East Liberty Station	Pa. R. R	918
East Mahanoy Junction	E. M. R. R	1,109
Easton	Lehigh Valley R. R	210
Do	L. & S. R. R	215
Do. B. M. on W. corner jail	U. S. C. & G. S	357
Do. window sill E. side C. H	U. S. C. & G. S	364
Easton, B. M. at	U. S. C. & G. S	214
East Pa. R. R. Junction	Lehigh Valley R. R	251
East Sandy Station	A. V. R. R	975
East Titusville	D., A. V. & P. R. R	1,178

Station.	Authority.	Elevation.
		Feet.
Ebensburgh	E. & C. R. R	2,022
Eckley	L. & S. R. R	1,663
Economy	P., Ft. W. & C. R. R	715
Eddington, Dunk's Ferry Road	Phil. & T. R. R	42
Edge Hill	N. Pa. R. R	293
Edgewater Station	A. V. R. R	761
Edgewood Station	Pa. R. R	923
Edgeworth	P., Ft. W. W. & C. R. R	725
Edinborough	P. & P. R. R	1,212
Do..Geodetic Station	U. S. Lake Survey	1,603
Edinburgh	N. C. & B. V. R. R	802
Egypt	B. & O. R. R	1,302
Eldorado	Pa. R. R	1,093
Eldred	B., N. Y. & P. R. R	1,443
Elizabeth	P. V. & C. R. R	747
Elizabeth Furnace	Pa. R. R	1,079
Elizabethtown	Pa. R. R	457
Ellrod	B. & O. R. R	768
Ellwood	S. & S. R. R	673
Elm	Pa. R. R	285
Emaus Junction	Perkiomen R. R	391
Emarres Station	E. Pa. R. R	434
Embeenville	W. & R. R. R	231
Emigsville	N. C. R. R	376
Emlenton Station	A. V. R. R	905
Emporium	B., N. Y. & P. R. R	1,024
Do	P. & E. R. R	1,033
Emsworth	P., Ft. W. & C. R. R	725
Enon	P., Ft. W. & C. R. R	994
Enterprise	P. B. R. R	531
Do	Pithole Valley R. R	1,261
Enz	Bennett's Br. R. R	964
Eochwan Station	A. V. R. R	982
Ephrata	R. & C. R. R	384
Erie, Depot	L. S. & M. S. R. R	686
Do.Chestnut st., at 2d st. (Lake Bluff).	City Levels	643
Do.Chesnut and 26th st	City Levels	763
Do.Water in reservoir, city water works	City Levels	808
Do.Centre of State st., at pier	P. &. E. R. R	593
Do.Geodetic Station	U. S. Lake Survey	859
Do.Signal Station	U. S Signal Office	681
Espy	Del., L. & W. R. R	[illegible]
Espyville	E. & P. R. R	[illegible]
Evans	P. & C. R. R	[illegible]
Evansburgh	A. & G. W. R. R	[illegible]
Everett	H. & B. T. R. R	[illegible]
Evergreen Water Station	Bennett's Br. R. R	[illegible]
Everson	S. W. Pa. R. R	[illegible]
Ewing's Mills	Chartier's R. R	[illegible]
Exeter	Phil. & R. R. R	[illegible]
Exton	Chester Valley R. R	[illegible]
Factoryville	Del., L. & W. R. R	[illegible]
Fairbanks, junction of coal road	W. Pa. R. R	[illegible]
Fairhope	B. & O. R. R	1,38[illegible]
Fairmount Station	Bennett's Br. R. R	1,06[illegible]
Fair Oaks	P., Ft. W. & C. R. R	71[illegible]
Fairview	Lehigh Valley R. R	1,67[illegible]
Fairview	E. & P. R. R	73[illegible]
Do	W. Pa. R. R	74[illegible]
Do	Pa. R. R	38[illegible]
Fairville	P. & B. C. R. R	25[illegible]
Fall Brook	Tioga R. R	1,8[illegible]
Falls	Lehigh Valley R.R	58[illegible]

Station.	Authority.	Elevation.
		Feet.
Farmer's Valley	McK. & B. R. R	1,476
Farrandsville	P. & E. R. R	583
Fayette	P. & C. R.R	921
Felton	P. B. R. R	536
Fenmore	P. B. R. R	435
Ferguson	S. W. Pa. Extension	1,132
Do	P. & C. R. R	1,138
Ferndale	C. & W. R. R	1,095
Ferney	P. & E. R. R	594
Fernwood	W. C. & P. R. R	90
Figarts	B. G. R. R	2,108
Finstman's	P. & C. R. R	1,076
Fishers Ferry	N. C. R. R	433
Fishers Summit	H. & B. T. R. R	974
Fleetwood	E. Pa. R. R	449
Forest City	N. Y., L. E. & W. R. R	1,460
Forge	S. & S. R. R	435
Forrest	E. B. & W. R. R	576
Fort Washington	N. Pa. R. R	170
Fossilville	Bed. & Bridge. R. R	1,091
Foster's Station	A. V. R. R	970
Fosterville	S. W. Pa. R. R	967
Fostoria	Pa. R. R	1,029
Fountain Mills	P. & C. R. R	1,042
Foxburgh Station	A. V. R. R	897
Foxchase	Phil. & N. R. R	200
Frackville	M. C. R. R	1,479
Franklin	A. & G. W. R. R	987
Do..Branch Junction at head block of switch	A. & G. W. R. R	1,074
Do	L. S. & M. S. R. R	1,017
Frankstown	B. & O. R. R	783
Do	Pa. R. R	918
Fraser	Pa. R. R	490
Fredonia	S. & A. R. R	1,177
Freeburgh	S. & N. R. R	509
Freedom	P., Ft. W. & C. R. R	703
Freemansburgh	Lehigh Valley R. R	225
Do	L. & S. R. R	222
Freeport, Second Station	W. Pa. R. R	772
Frenchtown	Lehigh Valley R. R	690
Frisbee	McK. & B. R. R	1,465
Fritztown	R. & C. R. R	472
Fuller's	Bennett's Br. R. R	1,327
Gaines' (Water in Pine Creek)	J. S., P. C. & B. R. R	1,259
Gallaghersville	Pa. R. R	298
Gallitzin	Pa. R. R	2,161
Galusha's	N. Y., R. & P. R. R	1,432
Gap	Pa. R. R	559
Gardens	Chester Valley R. R	225
Gardner	C. & F. R. R	469
Gardner's	T. & C. R. R	1,568
Garland	D., A. V. & P. R. R	1,293
Do	P. & E. R. R	1,308
Garrett	B. & O. R. R	1,948
Garver's Ferry Station	A. V. R. R	785
Garvin	N. C. & F. R. R	1,327
Gaysport, B. M. on step of ladies' waiting room, Gaysport Station	Pa. R. R	947
Geigertown	W. & R. R. R	432
Geneva	A. & G. W. R. R	1,069
Georges Station	Pa. R. R	1,196
Georgetown	N. C. R. R.	417

Station.	Authority.	Elevation.
		Feet.
Germantown Depot	Phil. & R. R. R.	215
Gilesville	N. Y., L. E. & W. R. R.	2,016
Gillett's	N. C. R. R	1,167
Girard	L. S. & M. S. R. R	717
Girard Junction	E. & P. R. R	697
Girard Manor Station	C. & W. R. R	1,407
Girardville	M. & S. R. R	1,021
Glasgow	C. R. R	165
Glatfelters	N. C. R. R	335
Glen Carbon	M. H. & S. H. R. R	1,124
Glencoe	B. & O. R. R	1,623
Glendale	P., Ft. W. & C. R. R	721
Glendon	L. & S. R. R	215
Glen Hall	W. & R. R. R	218
Glenlock	Pa. R. R	453
Glen Mill	W. C. & P. R. R	19
Glen Onoko	Lehigh Valley R. R	59
Glen Riddle	W. C. & P. R. R	1[illegible]
Glen Rock	N. C. R. R	5[illegible]
Glen Union	P. & E. R. R	6[illegible]
Glyndon	P., T. & B. R. R	[illegible]
Gold Mine	S. & S. R. R	
Goldsboro	N. C. R. R	
Goods	Pa. R. R	[illegible]
Gordonville	Pa. R. R	
Gowan	D., H. & W. R. R	
Graham's	N. C. & F. R. R	
Grand Valley	D., A. V. & P. R. R	[illegible]
Grant	Bennett's Br. R. R	
Granville	N. C. R. R	[illegible]
Do	Pa. R. R	
Grapeville Station	Pa. R. R	[illegible]
Graters Ford	Perkiomen R. R	
Graybills	Perkiomen R. R	[illegible]
Gray's Mills	P., T. & B. R. R	[illegible]
Great Belt City, road crossing	W. Pa. R. R	[illegible]
Great Bend	Del., L. & W. R. R	8[illegible]
Do	N. Y., L. E. & W. R	8[illegible]
Greencastle	Cumberland Valley R. R	5[illegible]
Do.....B. M. on center of cross in stone in front wall P. R. Depot	U. S. C. & G. S	5[illegible]
Green Land	Perkiomen R. R	[illegible]
Greensburgh Junction	S. W. Pa. R. R	1,[illegible]
Greensburgh Station	Pa. R. R	1,[illegible]
Green Tree	Pa. R. R	5[illegible]
Greenville	Del., L. & W. R. R	1,1[illegible]
Do	A. & G. W. R. R	9[illegible]
Do	E. & P. R. R	9[illegible]
Greenwood	B. R. R	8[illegible]
Do	W. C. & P. R. R	2[illegible]
Grear's	Chartiers R. R	90[illegible]
Grey's Ferry Bridge	P., W. & B. R. R	[illegible]
Grinders	W. Pa. R. R	88[illegible]
Grove	B. & O. R. R	7[illegible]
Do	P. & E. R. R	7[illegible]
Grover	N. C. R. R	1,2[illegible]
Gum Stump	B. & S. S. R. R	1,0[illegible]
Guth's	C. & F. R. R	4[illegible]
Guyer, Half Moon Gap	L. C. & S. R. R	1,1[illegible]
Gwynedd	N. Pa. R. R	2[illegible]
Hadley	L. S. & M. S. R. R	1,0[illegible]
Hadley's	L. S. & M. S. R. R	1,0[illegible]
Halifax	N. C. R. R	[illegible]
Halls Station	C. & W. R. R	57[illegible]

Station.	Authority.	Elevation.
		Feet.
Halls Station..on Catawissa R. R., east bank of river	M. C. R. R	513
Harrisburg	Phil. & R. R. R	375
Hamlin	McK. & B. R. R	1,557
Hammersville	W. Pa. R. R	743
Hammonds	Pa. R. R	1,133
Hampton	N. Pa. R. R	276
Do	W. & R. R. R	223
Hanger's	B. V. R. R	2,073
Hanlon's	P., C. & St. L. R. R	942
Hannah	B. E. Valley R. R. R	1,057
Hanover	L. & S. R. R	654
Do	Pa. R. R	599
Hanover Junction	F. C. R. R	442
Hantos	L. & S. R. R	1,005
Harbison Station	W. P. R. R	802
Harbor Creek	L. S. & M. S. R. R	731
Harnish's Station	L. & Q. R. R	309
Harrisburg, depot	Pa. R. R	320
Do....W. line of depot	Pa. R. R	321
Do....curbstone at lamp post, United States Hotel	Pa. R. R	321
Do....W. line of Lebanon Valley Depot	Pa. R. R	322
Do....W. line of State street	Pa. R. R	326
Do....junc. with Pa. R. R. & N. C. R. R.	Cumberland Valley R. R	322
Do....top of N. rail, main east bound track, center of Market street (Pa. R. R.)	Cumberland Valley R. R	321
Do....top of N. rail, W. line of State st. (Pa. R. R.)	Cumberland Valley R. R	327
Do....top of N. rail, opposite 106th mile post (Pa. R. R.)	Cumberland Valley R. R	330
Do....top of N. rail at weighing scales, W. line of house, near 106th mile post	Cumberland Valley R. R	334
Do....top of north witness stone to meridian post, near the east entrance to State Capitol building	Cumberland Valley R. R	364
Do....B. M. on sandstone coping, near base of column, S. E. corner of vestibule, east entrance to State Capitol building (marked thus +)	Cumberland Valley R. R	368
Do....B. M. on slaty limestone rock in river bed, about 20 ft. S. from S. line of C. V. R. R. bridge, and 60 feet S. fr. 1st pier, 2 ft. above low-water mark	Cumberland Valley R. R	292
Harrisburg, top of S. rail, E. end of C. V. R. R. bridge	Cumberland Valley R. R	332
Harrisburg, top of S. rail, W. end of C. V. R. R. bridge	Cumberland Valley R. R	353
Harrisburg, B. M. on projecting course of stone work at base of 1st pier, S. W. cor. W. end of C. V. R. R. bridge	Cumberland Valley R. R	297
Harrisburg, B. M. on center of top surface of monument in capitol grounds	U. S. C. & G. S	357
Harrisburg, B. M on base pillar at S. E. corner capitol building	U. S. C. & G. S	367
Harrisville	S. & A. R. R	1,340
Hartsville	N. E. Pa. R. R	242
Hatfield	N. Pa. R. R	311
Hatsborough	N. Pa. R. R	229

Station.	Authority.	Elevation.
		Feet.
Haugus	Berlin R. R	2,073
Hawk Eye	S. W. P. A. R. R	1,067
Hawkins Station	Pa. R. R	883
Hawk Switch	N. Valley R. R	1,221
Hawley	Del. & Hudson Canal	880
Do	N. Y., L. E. & W. R. R	899
Haysville	P., Ft. W. & C. R. R	721
Hazardville	L. & S. R. R	417
Hazelwood	B. & O. R. R	789
Heathville	Bennett's Br. R. R	1,161
Hecla	L. Schuyl. R. R	590
Heidelburg	Lebanon Valley R. R	379
Heilmansdale	L. & T. R. R	515
Heistand's	York Branch P. R. R	437
Helena	W. Pa. R. R	1,017
Hellam	York Branch P. R. R	348
Hellertown	N. Pa. R. R	276
Hemlock	P. & E. R. R	1,464
Hemphill	W., C. & P. R. R	318
Henderson's	Chester Valley R. R	165
Henrietta Junction	Pa. R. R	1,391
Henry's Bend	P., T. & B. R. R	1,035
Henryville	Del., L. & W. R. R	596
Herman	W. Pa. R. R	1,301
Herndon Junction	M. & S. R. R	431
Herrick Center	N. Y., L. E. & W. R. R	1,770
Herrold's Saw-Mill	S. & N. B. R. R	415
Hess Station	L. & Q. R. R	424
Hestonville	Pa. R. R	143
Hexenberg	U. & N. F. R. R	1,415
Hibernia	W. & R. R. R	530
Hickory	P., T. & B. R. R	1,091
Hickory Run	Lehigh Valley R. R	1,016
Hick's Ferry	Del., L. & W. R. R	521
High Bridge	N. Y. & N. R. R	8
Highland	P., Ft. W. & C. R. R	1,043
High Rock, B. M	P. B. R. R	383
Highspire	Pa. R. R	300
Hill's	Chartiers R. R	880
Hillsborough	Cumberland T'p'k	1,750
Hillside	Pa. R. R	1,129
Hill's Mills	W. Pa. R. R	780
Hilltop	N. Pa. R. R	555
Hilltown	N. C. & B. V. R. R	799
Hillville Station	A. V. R. R	865
Hoggsett's	P. & C. R. R	978
Hoggsett's Mill	S. W. Pa. Extension	961
Hokendauqua	Lehigh Valley R. R	295
Holliday	C., C. & A. R. R	1,151
Hollidaysburg	Pa. R. R	953
Do.....draw-bridge	Pa. R. R	942
Homestead	P., V. & C. R. R	761
Hometown	N. Valley R. R	1,176
Homewood	Pa. R. R	923
Do.....N. C. & B. V. R. R	P., Ft. W. & C. R. R	949
Do.....P., Ft. W. & C. R. R	N. C. & B. V. R. R	950
Honesdale	Del. & Hudson Canal	965
Do	N. Y., L. E. & W. R. R	966
Honeybrook	W. & R. R. R	596
Honeycreek	M. & C. Co. R. R	647
Hood's Road	W. C. R. R	595
Hopbottom	D., L. & W. R. R	893
Hope Mills	N. C. & F. R. R	1,107
Hopes	L. & S. R. R	219

Station.	Authority.	Elevation.
		Feet.
Hopewell	H. & B. T. R. R	898
Houston's	Chartiers R. R	949
Do	Pa. R. R	1,056
Howard	B. E. Valley R. R	679
Howard Hill	N. Y., L. E. & W. R. R	2,230
Do.....Summit	N. Y., R. & P. R. R	2,235
Howellville	Chester Valley R. R	221
Huffs	S. W. Pa. R. R	1,001
Hughsville	M. C. R. R	600
Hulton Station	A. V. R. R	778
Hummelstown	Lebanon Valley R. R	376
Hunkers	S. W. Pa. R. R	945
Hunter	P., T. & B. R. R	1,061
Hunters	M. R. R	1,547
Huntingdon	H. & B. T. R. R	621
Huntingdon Valley	Phil. & N. R. R	117
Huntley	P. & E. R. R	861
Hydetown	P., T. & B. R. R	1,252
Hyner	P. & E. R. R	644
Idlewood	P., C. & St. L. R. R	847
Imperial	P., T. & B. R. R	1,008
Indian Creek	B. & O. R. R	990
Ingram	P., C. & St. L. R. R	871
Iona Station	A. V. R. R	748
Iowa Mills	Bennett's Br. R. R	1,299
Iron Bridge	Pa. R. R	496
Do	P. & C. R. R	1,051
Iron Stone	C. R. R	312
Irvineton	D., A. V. & P. R. R	1,164
Do	P. & E. R. R	1,172
Irvineton Junction, with P. & E. R. R	P., T. & B. R. R	1,171
Irving	L. & T. R. R	499
Irwins Station	Pa. R. R	884
Isabella	W. R. R. R	639
Jackson	D., A. V. & P. R. R	1,181
Jackson Centre	N. C. & F. R. R	1,257
Jackson's	P. & E. R. R	1,230
Jack's Run	P., Ft. W. & C. R. R	728
Jackstown	Pa. R. R	595
Jacob's Creek	B. & O. R. R	797
Do	S. W. Pa. R. R	1,034
Jacob's Mill	Pa. R. R	504
Jamestown	L. S. & M. S. R. R	990
Do....crossing E. & P. R. R	L. S. & M. S. R. R	990
Do....crossing Franklin Division, L. S. & M. S. R. R	E. & P. R. R	979
Jamison	P., T. & B. R. R	1,073
Jeddo	L. & S. R. R	1,618
Jefferson	S. & S. R. R	531
Jenkintown Junction	N. Pa. R. R	203
Jermyn	L. R. R	971
Jersey Mills	J. S., P. C. & B. R. R	653
Jersey Shore	P. & E. R. R	593
Do.....Main street	J. S., P. C. & B. R. R	548
Joanna	W. & R. R. R	627
Johnsburgh	N. Y., L. E. & W. R. R	1,461
Do	P. & E. R. R	1,442
John's Mines	M. C. R. R	805
Johnson's	Chartiers R. R	971
Johnson Station	A. V. R. R	760
Johnstown	Pa. R. R	1,184
Jones' Ferry	P., C. & St. L. R. R	757
Jonestown	L. & T. R. R	422
Julian	B. E. Valley R. R	851

Station.	Authority.	Elevation.
		Feet.
Junction with P., Ft. W. & C. R. R	W. Pa. R. R	739
Kalmia Colliery	L. & T. R. R	1,237
Kane	P. & E. R. R	2,014
Karn's	W. Pa. R. R	768
Karns City	P. & K. C. R. R	1,204
Kassons	E. & P. R. R	1,111
Kantz P. O., water's edge, ordinary low water, middle creek	S. & N. R. R	448
Kearney's Station	Pa. R. R	1,048
Keating	P. & E. R. R	718
Do..(Summit)	B., N. Y. & P. R. R	1,881
Keensville	S. & N. B. R. R	447
Kelley Station	A. V. R. R	781
Kelly, State Agricultural College		1,111
Kelleyville	W., C. & P. R. R	102
Kennett Square	P. & B. C. R. R	260
Keystone	M. & S. R. R	1,033
Do.. Keystone Coal and Manf. Co	S. R. R	1,976
Kilbourne's (Water, Pine Creek)	J. S., P. C. & B. R. R	1,301
Kimberton	Pickering Valley R. R	211
Kimbles	N. Y., L. E. & W. R. R	851
King of Prussia	Chester Valley R. R	190
Kingston	Del., L. & W. R. R	562
Kinzers	Pa. R. R	468
Kinzua	N. Y., R. & P. R. R	1,956
Kinzua Viaduct	N. Y., L. E. & W. R. R	2,110
Kipp's Run	D., H. & W. R. R	463
Kirkland	W. C. R. R	548
Kittanning	Pa. R. R	1,594
Do....top of curbstone on street corner in front of Valley Central Hotel	A. V. R. R	810
Kline's Grove	D., H. & W. R. R	445
Koffles Gap	N. Pa. R. R	530
Krebs	C. & W. R. R	1,225
Laceyville	Lehigh Valley R. R	658
Lackawanna	Del., L. & W. R. R	637
Do	N. Y., L. E. & W. R. R	648
Do.....Junction	Lehigh Valley R. R	569
La Fayette	Phil. & R. R. R	53
Lagrange	Lehigh Valley R. R	598
Lakeville	U. & T. R. R	1,412
Lamoka	B. R. R	1,042
Lamokin Junction	P., W. & B. R. R	37
Lancaster Junction	R. & C. R. R	378
Do.....B. M. on stone wall, Lancaster Locomotive Works	Pa. R. R	359
Lancaster Pike	E. B. & W. R. R	696
Landingville	Phil. & R. R. R	503
Landisburgh	Levels	740
Landisville	R. & C. R. R	404
Do.....R. & Col. R. R. Crossing	Pa. R. R	405
Lanes Mill	N. Y., R. & P. R. R	1,487
Langdons	P. & E. R. R	1,135
Lanigan Furnace	M. C. R. R	717
Lansdale Junction	N. Pa. R. R	368
Larabee	B., N. Y. & P. R. R	1,481
Larimer's Station	Pa. R. R	866
Latrobe	Pa. R. R	1,006
Laubachs	L. & S. R. R	304
Laughlin	B. & O. R. R	770
Laurel	P. B. R. R	412
Do	W. & R. R. R	241

Station.	Authority.	Elevation.
		Feet.
Laurel Hill	Levels	2,495
Laurel Run	B. & O. R. R	856
Laurelton	L., C. & S. C. R. R	607
Laurys	Lehigh Valley R. R	329
Lawrence Junction	N. C. & B. V. R. R	774
Lawrenceville	Tioga R. R	1,006
Do.....Station	Pa. R. R	780
Lawsonham	Bennett's Br. R. R	919
Do	A. V. R. R	916
Layton	B. & O. R. R	818
Leaman Place	Pa. R. R	382
Leasdale	Chartiers R. R	794
Leatherwood	Bennett's Br. R. R	1,027
Lebanon	Lebanon Valley R. R	466
Do..Junction	L. & T. R. R	468
Do..B. M. on center of cross in front of wall of Saint Mary's Church	U. S. C. & G. S	475
Do..B. M. on top of marble post, corner 8th and Church streets, grounds of P. L. Weiner	U. S. C. & G. S	466
Le Bœuf	P. & E. R. R	1,217
Lees	Chester Valley R. R	279
Leesburg	N. C. & F. R. R	1,045
Leesport	Phil. & R. R. R	298
Leetsdale	P., Ft. W. & C. R. R	715
Lehigh Gap	L. & S. R. R	393
Do	Lehigh Valley R. R	389
Lehighton	L. & S. R. R	494
Do	Leigh Valley R. R	466
Lemon	M. R. R	1,041
Lemont	L., C. & S. C. R. R	1,002
Do	S. W. Pa. Extension	1,030
Lemont's	P. & C. R. R	1,084
Lenape	W. & R. R. R	183
Lenni	W., C. & P. R. R	136
Leonard's Point	T. & C. R. R	1,306
Lewisburgh	L., C. & S. C. R. R	466
Lewis' Mills	E. B. & W. R. R	542
Lewiston	Pa. R. R	498
Do..junction with Pa. R. R	Mifflin & Center Co. R. R	499
Liberty	B., N. Y. & P. R. R	1,646
Do.Spring	T. & C. R. R	1,103
Ligonier	Ligonier Valley R. R	1,748
Lilly	E. & C. R. R	2,030
Lillys	Pa. R. R	1,887
Limerick	Phil. & R. R. R	138
Lime Ridge	Del., L. & W. R. R	509
Lime Valley Station	L. & Q. R. R	384
Lincolnville	U. & T. R. R	1,382
Linden	P. & E. R. R	533
Do.Surface of canal	J. S., P. C. & B R. R	528
Lindorff's Summit	Pa. R. R	1,185
Linesville	E. & P. R. R	1,033
Linwood	P., W. & B. R. R	31
Lititz	R. & C. R. R	375
Little Cooley	P. & P. R. R	1,203
Littletown	Pa. R. R	619
Livengood's Mill	S. R. R	2,001
Livermore	W. Pa. R. R	945
Liverpool	N. C. R. R	396
Do...Center of Market street	S. & N. R. R	409
Lloyd's Junction	B. G. R. R	2,167
Lock Haven, junction with B. E. V. R. R	P. & E. R. R	556
Lockport	L. & S. R. R	356

Station.	Authority.	Elevation.
		Feet.
Lockport	Pa. R. R	1,054
Lock Ridge	C. & F. R. R	440
Locust Gap Junction	M. & S. R. R	1,037
Logan	M. & C. Co. R. R	512
Logan's Ferry Station	A. V. R. R.	757
Logansport Station	A. V. R R	785
Long Run	B. & O. R. R	765
Lovells	P. & E. R. R	1,364
Lower Catasauqua	L. & S. R. R	271
Lowrie, at Warrior's Mark	L. C. & S. C. R. R	1,109
Ludlow	P. & E. R. R	1,603
Lutzville	Bed. & Bridge. R. R	1,045
Lycoming Creek Bridge	C. & W. R. R	529
Lykenstown	S. B. R. R	677
Lykens V. R. R. Junction	N. C. R. R	380
Lynn	M. R. R	1,032
Lyon (Pa. Furnace)	L. C. & S. C. R. R	1,074
Lyons	E. Pa. R. R	471
McAlisterville	S. & N. R. R	661
McAuley	C. & W. R. R	759
McCalls	W. C. R. R	463
McCall's Ferry	C. & P. D. R. R	169
McCandless	A. V. R. R	740
McClintock	P., T. & B. R. R	1,058
McConnellstown	H. & B. T. R. R	674
McDonald's	P., C. & St. L. R. R	979
McKean's Corner	P. & P. R. R	1,053
McKee's Half Falls	S. & N. B. R. R	41:
McKeesport	B. & O. R. R	765
McKune's	Lehigh Valley R. R	598
McMinns Summit	N. Y., R. & P. R. R	1,615
McVeytown	Pa. R. R	522
Magee	P., T. & B. R. R	1,131
Magee's	Phila. & R. R. R	64
Maghee's	Bennett's Br. R. R	1,387
Mahanoy City Depot	E. M. R. R	1,343
Mahantonga	N. C. R. R	405
Mahoningtonn	N. C. & B. V. R. R	789
Mainville	D., H. & W. R. R	589
Maltby Station	Del., L. & W. R. R	558
Malvern	Pa. R. R	546
Manatawny	C. R. R	192
Manayunk	Phil. & R. R. R	57
Do	Pa. R. R	519
Manchester	W. C. & P. R. R	211
Manheim	R. & C. R. R	402
Manns	M. & C. Co. R. R	573
Mann's Choice	Bed. & Bridge. R. R	1,136
Manor	W. & R. R. R.	572
Do Station	Pa. R. R	942
Manonville	A. V. R. R	798
Mansfield	Tioga R. R	1,140
Do ..junction with Chartiers R. R	P., C. & St. L. R. R	773
Mantua	Pa. R. R	101
Mapleton	Pa. R. R	593
Marcy	M. R. R.	965
Marietta	Pa. R. R	260
Marklesburg	H. & B. T. R. R	789
Martha	B. E. Valley R. R	912
Do. Furnace	Pa. R. R	1,054
Martinsburg	P. & K. C. R. R	1,104
Do	Pa. R. R	1,366
Do.....junction	Pa. R. R	1,344
Marysville	Pa. R. R	350

Station.	Authority.	Elevation.
		Feet.
Marysville . W. end of R. R. bridge	N. C. R. R	349
Do ....B. M. on hard sandstone, perpendicular from S. line of bridge, about 40 feet W. of 1st pier	N. C. R. R	312
Masontown, Barclay R. R. Bridge	B. R. R	794
Mauch Chunk	Lehigh Valley R. R	544
Do	L. & S. R. R	532
Maysville	Bennett's Br. R. R	1,108
Meadville	A. & G. W. R. R	1,080
Mechanicsburgh	Cumberland Valley R. R	436
Do junc. with C. Valley R. R.	M. & D. R. R	427
Media	W. C. & P. R. R	210
Medic's Run Bridge, B. M. on top of capston, N. E. cor., W. abutment	Bennett's Br. R. R	1,097
Mehoopany	Lehigh Valley R. R	634
Mellvale	N. C. R. R	168
Menge's Mill	Pa. R. R	455
Mercer	N. C. & F. R. R	1,097
Do	S. & A. R. R	1,108
Merion	Pa. R. R	247
Do	Phil. & R. R. R	81
Mertztown	E. Pa. R. R	455
Meshopper	Lehigh Valley R. R	644
Mexico	Pa. R. R	433
Meyersdale	S. R. R	1,964
Do .... L. & B. R. R	B. & O. R. R	2,065
Meyer's Switch	P., T. & B. R. R	1,243
Middaughs	N. Y., L. E. & W. R. R	615
Middlebury	C., C. & A. R. R	1,178
Middleport	Schuylkill Valley R. R	724
Middlesex	E. & P. R. R	833
Middletown	Pa. R. R	314
Middletown Ferry	N. C. R. R	307
Middletown Junction, Col. Br.	Pa. R. R	314
Midmont	N. Y., L. E. & W. R. R	2,101
Midway	L. S. & M. S. R. R	996
Do	Pa. R. R	394
Do	P., C. & St. L. R. R	1,106
Mifflin	L. & T. R. R	490
Do	Pa. R. R	441
Mifflinburgh	L., C. & S. C. R. R	565
Mifflin Cross-roads	D., H. & W. R. R	811
Mile Post	A. V. R. R	746
Milesburgh	Bellefonte Branch R. R	700
Milford	S. & M. P. R. R	1,932
Mill Creek	Pa. R. R	604
Mill Creek Junction	M. C. R. R	633
Miller, Logan's Run	L., C. & S. C. R. R	1,070
Millers	A. & G. W. R. R	1,169
Do	S. L. & S. R. R	1,330
Millersburgh	S. B. R. R	397
Do .....junction with L. V. C. R. R.	N. C. R. R	396
Miller's Farm	P., T. & B. R. R	1,131
Miller's Mill	S. & N. R. R	487
Miller's Station	Bennett's Br. R. R	905
Millerstown	E. Pa. R. R	383
Do	Pa. R. R	408
Millerton	T. & E. & S. L. R. R	1,246
Millgrove	Yough. R. R	867
Mill Hall	B. & E. Valley R. R	573
Mill Lane	Chester Valley R. R	315
Millmont	L., C. & S. C. R. R	585

Station.	Authority.	Elevation.
		Feet.
Millvale Station	Pa. R. R	833
Mill Village	A. & G. W. R. R	1,216
Millville	N. Y., L. E. & W. R. R	780
Do	Bennett's Br. R. R	1,093
Millwood	Pa. R. R	1,155
Milroy	M. & C. Co. R. R	746
Milton	P. & E. R. R	473
Do	C. & W. R. R	465
Mineral Point	Pa. R. R	1,414
Do.....junction with B. & O. R. R., Pittsburgh Division	S. & M. P. R. R	1,824
Do.....S. & M. P. R. R. junction	B. & O. R. R	1,825
Minersville	M. H. & S. H. R. R	700
Mingo	Phil. & R. R. R	116
Minnequa	N. C. R. R	1,230
Mintzer's	C. & W. R. R	964
Modena	W. & R. R. R	278
Mohrsville	Phil. & R. R. R	302
Monckton	N. C. R. R	344
Monocacy	Phil. & R. R. R	162
Monongahela City	P. V. & C. R. R	753
Monroe Station	W. Pa. R. R	840
Monroeton, junction with S., L. & E. R. R	B. R. R	762
Mont Alto Junction	Cumberland Valley R. R	714
Do.....near the furnace	Mt. A. R. R	968
Montandon, junction of L. C. & S. C. R. R	P. & E. R. R	462
Monterey Station	A. V. R. R	875
Montgomery	C. & W. R. R	486
Do	P. & E. R. R	490
Montoursville	C. & W. R. R	525
Montrose	M. R. R	1,656
Montrose Station	Del., L. & W. R. R	1,053
Mooreheads	L. S. & M. S. R. R	768
Mooresburgh	C. & W. R. R	618
Moore's	P., W. & B. R. R	94
Moorestown	E. B. & W. R. R	443
Moravia	N. C. & B. V. R. R	806
Moredale	H. & B. T. R. R	1,680
Morgans	P. & C. R. R	944
Morganza	Chartiers R. R	938
Morning Side Station	A. V. R. R	747
Morrisville, N. E. side of Wash. street	Phil. & T. R. R	34
Morton	W. C. & P. R. R	121
Mortonville	W. & R. R. R	260
Moscow	Del., L. & W. R. R	1,558
Mount Bartow	C. R. R	469
Mount Braddock	S. W. Pa. Extension	1,203
Do	P. & C. R. R	1,175
Mount Carbon	Phil. & R. R. R	606
Mount Carmel	N. C. R. R	1,054
Mount Dallas	Bed. & Bridge. R. R	1,053
Mount Eagle	B. E. Valley R. R	662
Mount Joy, east side of R. R. hotel	Pa. R. R	366
Mount Pleasant	Bennett's Branch R. R	999
Do	T. & C. R. R	1,784
Do	P. & C. R. R	1,086
Mount Union, junction of E. B. T. R. R. (narrow gauge)	Pa. R. R	597
Mountville	Pa. R. R	404
Mount Wolf	N. C. R. R	376
Muddy Creek Forks, B. M	P. B. R. R	367
Mud Pike	S. & M. P. R. R	2,016
Muncy	C. & W. R. R	495
Do	P. & E. R. R	519

Station.	Authority.	Elevation.
		Feet.
Munroe	Cumberland T'p'k	1,065
Murdocks	Pa. R. R	1,626
Murray	L. & T. R. R	456
Myerstown	Lebanon Valley R. R	474
Nagney	M. & C. Co. R. R	678
Nanticoke	Del., L. & W. R. R	538
Napier	Bed. & Bridge. R. R	1,108
Naples	L. S. & M. S. R. R	1,165
Nashua	E. & P. R. R	821
Natrona	W. Pa. R. R	768
Nelson	C., C. & A. R. R	1,186
Do	N. C. & F. R. R	1,060
Neshanock Falls	N. C. & F. R. R	992
Nesquehoning	N. Valley R. R	801
New Albany	S. L. & S. R. R	1,197
New Berlin	C. R. R	364
Newberry	P. & E. R. R	529
New Bethlehem	Bennett's Branch R. R	1,080
New Bridge	H. & B. T. R. R	831
New Brighton	P., Ft. W. & C. R. R	750
New Buffalo, water in mill-race	S. & N. B. R. R	377
New Castle	M. C. R. R	876
Do....junction with N. C. Br. of P., Ft. W. & C. R. R	E. & P. R. R	809
Do....junction with E. & P. R. R	N. C. & B. V. R. R	803
Do....junction with N. C. & B.V.R.R. half mile south of city	N. C. & F. R. R	793
New Castle Pool	Levels	799
New Columbia	C. & W. R. R	477
New Cumberland	N. C. R. R	312
New Florence	Pa. R. R	1,076
New Freedom	N. C. R. R	827
New Gallilee	P., Ft. W. & C. R. R	957
New Hamburgh	S. & A. R. R	1,158
New Haven	S. W. Pa. Extension	893
Newkirk	S. Valley R. R	912
New Milford	Del., L. & W. R. R	1,087
New Philadelphia	S. Valley R. R	690
Newport	Lehigh Valley R. R	1,023
Do	N. C. & B. V. R. R	812
Do	Pa. R. R	395
New Providence Station	L. & Q. R. R	401
Newton	D., A. V. & P. R. R	1,411
Newton Hamilton	Pa. R. R	599
Newton's Mills	P. & P. R. R	1,258
Newtown	Phil. & N. R. R	145
Newville	Cumberland Valley R. R	533
New York Junction	Phil. & R. R. R	105
Nicetown	Phil. & R. R. R	139
Nicholson	Del., L. & W. R. R	769
Nigger Hill	N. Pa. R. R	452
Niles Valley	C., C. & A. R. R	1,192
Nineveh	Pa. R. R	1,121
Do.junction	N. Y., L. E. & W. R. R	981
Noble's	U. & T. R. R	1,298
Noblestown	P., C. & St. L. R. R	926
Norristown	Phil. & R. R. R	75
Northbrook	W. & R. R. R	209
North East	L. S. & M. S. R. R	805
North Pa. R. R. junction	Lehigh Valley R. R	237
North Point	P. & E. R. R	659
Northumberland, intersection with Bloomsburgh Division D., L. & W. R. R	S. & N. B. R. R	452

Station.	Authority.	Elevation.
		Feet.
Northumberland, junction of Del., L. & W. R. R	P. & E. R. R	454
Do S. E. line of depot	Del., L. & W. R R	452
North Warren	D., A. V. & P. R. R	1,216
North West	W. Pa. R. R	894
Oakdale	B. & O. R. R	849
Do	P., C. & St. L. R. R	906
Oak Hill Station	Pa. R. R	750
Oakland	Chester Valley R. R	301
Do	Del., L. & W. R. R	1,011
Oakley's	Del., L. & W. R. R	945
Oaks	Perkiomen R. R	130
O'Harra	E. & C. R. R	2,015
Ohio Pyle	B. & O. R. R	1,237
Oil City	L. S. & M. S. R. R	1,010
Do	P., T. & B. R. R	1,008
Do. Centre street crossing	P., T. & B. R. R	1,110
Do. east, connects with A. V. R. R	L. S. & M. S. R. R	1,010
Do. connects with P., T. & B. R. R. & with Franklin Br. of the A. & G. W. R. R	L. S. & M. S. R. R	1,017
Oleopolis	P., T. & B. R. R	1,032
Do	Pithole Valley R. R	1,019
Olyphant	L. R. R	810
Ore Valley, B. M	P. B. R. R	570
Osceola	B. & O. R. R	768
Paintersville	S. W. Pa. R. R	952
Palmyra	Lebanon Valley R. R	455
Paoli	Pa. R. R	534
Paoli Road	Chester Valley R. R	238
Paradise	Del., L. & W. R. R	1,521
Pardoe	S. & A. R. R	1,205
Paris Road	P., C. & St. L. R. R	835
Parker Junction with A. V. R. R	P. & K. C. R. R	888
Parker Station	A. V. R. R	889
Parkesburgh	Pa. R. R	537
Parkton	N. C. R. R	450
Parnassus Station	A. V. R. R	763
Parryville	L. & S. R. R	443
Paschall	P., W. & B. R. R	58
Patton's	W. C. R. R	505
Do. bench on top of parapet coping of arch culvert, W. side of road	Bennett's Br. R. R	1,131
Paxton	Lebanon Valley R. R	376
Peach Bottom	C. & P. D. R. R	99
Do	P. B. R. R	118
Pecopson	W. & R. R. R	180
Pencoyd	Phil. & R. R R	61
Pennsylvania House	P., T. & B. R. R	1,153
Penllyn	N. Pa. R. R	239
Pennfield	Bennett's Br. R. R	1,289
Penn Haven	L. & S. R. R	724
Do junction	Lehigh Valley R. R	705
Do Do	L. & S. R. R	708
Penningtonville	Pa. R. R	500
Penn Junction	E. Pa. R. R	257
Pennock's Summit	Pa. & Del. R.	463
Penn Station	P. & B. C. R. R	506
Do	Pa. R. R	974
Pennsville	S. W. Pa. R. R	1,054
Penn Valley	Phil. & T. R. R	21
Pequea Station	L. & Q. R. R	300
Perkiomen Junction	Phil. & R. R. R	109
Perryville	Pa. R. R	441

Station.	Authority.	Elevation.
		Feet.
'etersburgh	Pa. R. R	678
'eter's Mills	L. & L. R. R	255
'etroleum Centre	P., T. & B. R. R	1,089
'etrolia	P. & K. C. R. R	1,175
'hiladelphia depot, 31st and Chestnut sts	W., C. & P. R. R	14
Do.....Market street	Pa. R. R	32
Do.....West Philadelphia	Pa. R. R	34
Do.....Fairmount bridge	Pa. R. R	51
Do.....Richmond street bridge	Phil. & R. R. R	28
Do.....Depot, cor. 9th and Green sts	Phil. & R. R. R	47
Do.....Do....at Willow street	N. Pa. R. R	28
Do.....Kensington, Frankford road crossing	Phil. & T. R. R	32
Do.....Frankford Station, middle of Church street	Phil. & T. R. R	32
Do.....Bridesburgh, middle of Bridge street	Phil. & T. R. R	32
Do.....Tacony	Phil. & T. R. R	34
Do.....Southwark	P., W. & B. R. R	7
Do.....3d street	P., W. & B. R. R	27
Do.....6th street	P., W. & B. R. R	33
Do.....7th street	P., W. & B. R. R	34
Do.....10th street	P., W. & B. R. R	32
Do.....12th street	P., W. & B. R. R	27
Do.....18th street	P., W. & B. R. R	36
Do.....Signal Station	U. S. Signal Office	52
'hilipsburgh	T. & C. R. R	1,425
Do	A. V. R. R	855
'hilson's	B. & O. R. R	1,820
'hœnixville	Phil. & R. R. R	110
'icture Rock	M. C. E. R	668
'ikeland	Pickering Valley R. R	272
'ine	P. & E. R. R	565
'ine Creek	A. V. R. R	812
'inegrove	B. & O. R. R	1,874
'ine Grove	L., C. & S. C. R. R	1,236
Do	S. & A. R. R	1,250
Do	N. Y., L. E. & W. R. R	668
Do.... Junction	S. & S. R. R	520
'ine Hill	B. V. R. R	2,064
'inkerton	B. & O. R. R	1,649
'ioneer	P., T. & B. R. R	1,099
'iper's Run	H. & B. T. R. R	947
'ithole City	Pithole Valley R. R	1,309
Pittsburgh..Union Depot	P., Ft. W. &. C. R. R	745
Do....on window-sill of Monongahela Incline Plane, Check House	City levels	1,106
Do....on Belt course of Union Depot, main entrance	City levels	746
Do....on East end door-sill of Point Breeze Hotel, at intersection of Penn. and Fifth avenues	City levels	973
Do....on Belt course of Munshall's distillery, corner Penn. ave. and Water street	City levels	727
Do....on door-sill of post-office	City levels	751
Pittsburgh, on embankment of Lower (old) Reservoir, on Bedford ave	City levels	865
Do....on embankment of Upper (old) Reservoir, Bedford ave	City levels	1,101
Do....on flow-line of Highland ave. (new) Reservoir	City levels	1,064
Do....on flow-line of Herron Hill (new) Reservoir	City Levels	1,259

Station.	Authority.	Elevat[redacted]ti
		Fe[redacted]et.
Pittsburgh on flow-line of Brilliant Hill (new) Reservoir	City levels	93
Do....B. M. on outer corner of coping, near Twenty-sixth street	A. V. R. R	74[illegible]
Do....Liberty avenue crossing	A. V. R. R	743
Do....B. M. on south wall, upper outside corner, culvert	A. V. R. R	728
Do....junction with P. C. & St. L. R. R.	P., V. & C. R. R	776
Do....opposite Forty-third st. station.	P., V. & C. R. R	732
Do....crossing of Fiftieth street	P., V. & C. R. R	739
Do....low water, city datum	Levels	699
Do....high water, 1852	Levels	730
Do....high water, 1832	Levels	733
Do....east side of Irwin street	Penn. R. R	737
Do....east side of Duquesne street	Penn. R. R	732
Do....B. M. at foot of lamp-post, south side of Liberty street, intersection with Water street	Penn. R. R	721
Do....B. M. on south side of base ring of fire-plug, north side of Penn. st. intersec. with Water st	Penn. R. R	726
Do....Signal Station	U. S. Signal Office	762
Pittsfield	D., A. V. & P. R. R	1,245
Pittston	Del., L. & W. R. R	572
Do. west end bridge, crossing Susquehanna		571
Plainsville	Lehigh Valley R. R	546
Pleasant Grove	H. & B. T. R. R	748
Pleasantville	Pithole Valley R. R	1,634
Plymouth	Del., L. & W. R. R	535
Do...Junction	Del., L. & W. R. R	543
Point Lookout	B. G. R. R	1,915
Polk	L. S. & M. S. R. R	1,084
Pomeroy, E. intersec. of P. & D. R. R	Pa. R. R	483
Do...W. intersec. of P. & D. R. R	Pa. R. R	4[illegible]9
Pond Eddy	N. Y., L. E. & W. R. R	570
Portage	Pa. R. R	1,675
Port Allegheny	B., N. Y., & P. R. R	1,482
Port Carbon	S. Valley R. R	639
Do	M. C. R. R	634
Port Clinton	Del. & Hudson Canal	455
Do	Phil. & R. R. R	410
Port Jervis	Del. & Hudson Canal	455
Port Kennedy	Phil. & R. R. R	87
Portland	Del., L. & W. R. R	291
Port Matilda, Main st	B. E. Valley R. R	1,007
Port Perry Junction	B. & O. R. R	765
Port Royal	B. & O. R. R	792
Port Trevorton, R. R. track	S. & N. B. R. R	428
Potts Colliery	N. H. & S. H. R. R	1,094
Pottsgrove	C. & W. R. R	489
Pott's Landing	Phil. & R. R. R	63
Pottstown	Phil. & R. R. R	150
Pottsville	Phil. & R. R. R	614
Powelton	T. C. R. R	1,798
Pulaski	E. & P. R. R	826
Prather	Pithole Valley R. R	1,251
Prescott	Lebanon Valley R. R	501
President	P., T. & B. R. R	1,048
Primrose	P., C. & St. L. R. R	1,021
Princeton	P. & R. R. R	62
Prindibles	Bennett's Br. R. R	1,360
Providence	L. R. R	703
Quakake Station	C. & W. R. R	1,353
Quakertown	N. C. & B. V. R. R	817

Station.	Authority.	Elevation.
		Feet.
)uakertown	N. Pa. R. R	496
)uarryville	L. & Q. R. R	488
)ueens Run	P. & E. R. R	584
:adebaughs Station	Pa. R. R	1,150
:adnor	Pa. R. R	409
:ahn's	Perkiomen R. R	138
alston	N. C. R. R	860
ansom	Lehigh Valley R. R	579
arigs Station	C. & W. R. R	1,340
athbon	P. & E. R. R	1,317
attling Run	S. & S. R. R	692
aymilton	L. S. & M. S. R. R	1,138
eading	Phil. & R. R. R	268
Do. B. M. on coping stone easternmost R. R. bridge	U. S. C. & G. S	264
ed Bank Junction	Bennett's Br. R. R	851
edington	Lehigh Valley R. R	211
ed Lion	C. & F. R. R	793
Do	P. B. R. R	900
eed's Road	E., B. & W. R. R	309
eedsville	M. & C. Co. R. R	593
eese Station	Pa. R. R	903
eeseville	Pa. R. R	495
eimerton	A. V. R. R	837
einhold's	R. & C. R. R	449
eiter	L. & L. R. R	299
emington	P., Ft. W. & C. R. R	710
eno	A. & G. W. R. R	1,011
Do	L. S. & M. S. R. R	1,018
enovo	P. & E. R. R	672
eynolds	L. Schuyl. R. R	663
eynoldsville, at crossing of Brookville pike	Bennett's Br. R. R	1,377
heems	Pa. R. R	439
iceville	U. & T. R. R	1,369
ichfield	S. & N. R. R	765
ichland	Lebanon Valley R. R	491
iddlesburgh	H. & B. T. R. R	865
idgeway	P. & E. R. R	1,393
Do	N. Y., R. & P. R. R	1,376
idley Park	P., W. & B. R. R	73
ine's Store	S. & N. R. R	412
inggold	L. Schuyl. R. R	558
ingtown	C. & W. R. R	1,130
itchie	P. & E. R. R	632
ittenhouse Gap	C. & F. R. R	940
iverton	B. & O. R. R	765
oaring Run	T. & C. R. R	1,427
Do	W. Pa. R. R	830
oaring Spring Junction	Pa. R. R	1,196
obbin's	B. & O. R. R	768
oberts'	S. & M. P. R. R	2,042
obertsdale	E. Broadtop R. R	1,785
obesonia	Lebanon Valley R. R	441
ochester	Cleve. & P. R. R	711
Do...junction with C. & P. R. R	P., Ft. W. & C. R. R	706
ock Glen	D., H. & W. R. R	921
ockhill	E. Broadtop R. R	624
ockland Station	A. V. R. R	926
ockport	Lehigh Valley R. R	906
Do	L. & S. R. R	882
ockville	S. & S. R. R	349
ockwood	P., T. & B. R. R	1,016
oherstown	Pa. R. R	352

Station.	Authority.	Elevation.
		Feet.
Romain	S. R. R	1,974
Roots	B. G. R. R	1,222
Rosedale	P. & B. C. R. R	312
Rosemont	Pa. R. R	395
Ross	W. Pa. R. R	745
Roston Station	A. V. R. R	788
Rough and Ready	H. & B. T. R. R	869
Roulette	J. S., P. C, & B. R. R	1,537
Round Island	P. & E. R. R	755
Roups Station	Pa. R. R	882
Rouseville	P., T. & B. R. R	1,039
Rowlands	N. Y., L. E. & W R. R	704
Royer's Ford	Phil. & R. R. R	127
Roy Stone	P. & E. R. R	1,415
Run	L. S. & M. S. R. R	996
Runmerfield	Lehigh Valley R. R	696
Rupert	C. & W. R. R	495
Do	Del., L. & W. R. R	482
Russelburg	D., A. V. & P. R. R	1,233
Rutherford's	Lebanon Valley R. R	429
Rynd Farm	P., T. & B. R. R	1,043
Saegerstown	A. & G. W. R. R	1,116
Safe Harbor	C. & P. D. R. R	198
St. Clair	M. C. R. R	752
Do	Pa. R. R	1,092
St. George Station	A. V. R. R	935
St. Mary's	P. & E. R. R	1,667
Salem	L. S. & M. S. R. R	998
Salina	W. Pa. R. R	955
Salisbury	S. R. R	2,032
Saltillo	E. Broadtop R. R	781
Saltsburgh	B. & O. R. R	765
Salt Works	B. & O. R. R	766
Saltzburgh, Market street	W. Pa. R. R	891
Salunga	Pa. R. R	403
Sanders	E. & C. R. R	2,019
Sandpatch Tunnel, west portal	B. & O. R. R	2,283
Do ... east portal	B. & O. R. R	2,235
Sand Works	B. & O. R. R	921
Sandy Creek Station	A. V. R. R	746
Sandy Lake	L. S. & M. S. R. R	1,165
Sandy Lick Station	W. Pa. R. R	85[illegible]
Sandy Ridge	T. & C. R. R	1,912
Sandy Run Junction	L. & S. R. R	1,02[illegible]
Sang Hollow	Pa. R. R	1,1[illegible]
Sanner's	S. & M. P. R. R	1,8[illegible]
Sarah Furnace Station	A. V. R. R	8[illegible]
Sartwell	B., N. Y. & P. R. R	1,4[illegible]
Sarver's Station	W. Pa. R. R	1,0[illegible]
Saxonburg Station	W. Pa. R. R	1,20[illegible]
Saxton (new depot)	H. & B. T. R. R	84[illegible]
Sayre	Lehigh Valley R. R	77[illegible]
Scahonda	P. & E. R. R	1,5[illegible]
School Lane	Phila. & R. R. R	10[illegible]
Schur's	Phila. & R. R. R	7[illegible]
Schuylkill Bridge	Lebanon Valley R. R	27[illegible]
Schuylkill Haven	Phila. & R. R. R	52[illegible]
Schwenkville	Perkiomen R. R	15[illegible]
Scotch Valley	D., H. & W. R. R	1,017
Scottdale	S. W. Pa. R. R	1,04[illegible]
Scottsville	E. Broadtop R. R	71[illegible]
Scranton, Union Depot	Del., L. & W. R. R	73[illegible]
Do ... Hyde Park	City Engineer	74[illegible]
Do ... Cliff street	City Engineer	69[illegible]
Do ... Green Ridge	City Engineer	71[illegible]

Station.	Authority.	Elevation.
		Feet.
Scranton, Prov. street	City Engineer	771
Scrubgrass Station	A. V. R. R	945
Seager's	C. & W. R. R	512
Sedgwick	B. & O. R. R	868
Seeds	W. & R. R. R	195
Seityland	N. C. R. R	611
Selinsgrove, frog at junct'n with N. C. R. R.	Sunbury & Lewistown R. R	438
Do.....crossing Susquehanna River	Sunbury & Lewistown R. R	439
Do.....west end of R. R. bridge	Sunbury & Lewistown R. R	439
Do.....Station	Sunbury & Lewistown R. R	440
Do.....S. line station-house	N. C. R. R	438
Do.....junction	N. C. R. R	438
Do.....center of Pine street	S. & N. B. R. R	441
Sellers	R. & C. R. R	382
Sellersville	N. Pa. R. R	331
Sewickley	P., Ft. W. & C. R. R	736
Do....Station	Yough. R. R	780
Do....Y. Branch of Pennsylvania R. R.	B. & O. R. R	779
Seymour	N. C. & B. V. R. R	797
Shadyside Station	Pa. R. R	856
Shaeffer's	Bennett Branch R. R	1,425
Shaffer	P., T. & B. R. R	1,133
Shafton Station	Pa. R. R	905
Shainlines	Chester Valley R. R	136
Shamokin	N. C. R. R	738
Shamrock	E. Pa. R. R	433
Shanghai Station	Pa. R. R	1,173
Sharon	A. & G. W. R. R	859
Sharon Hill	P., W. & B. R. R	65
Sharpsburgh, Main street	W. Pa. R. R	739
Sharpsburgh Station	A. V. R. R	745
Sharpsville	E. & P. R. R	948
Shawmont	Phil. & R. R. R	69
Shawmut	P. & E. R. R	1,427
Shaw's Landing	A. & G. W. R. R	1,092
Shaw's Run	T. & C. R. R	1,112
Sheffield	P. & E. R. R	1,337
Shelmires	E. B. & W. R. R	246
Shenandoah, City Depot	M. & S. R. R	1,252
Shenango	E. & P. R. R	941
Do...Grade crossing S. & A. R. R	A. & G. W. R. R	936
Shenk's Ferry	C. & P. D. R. R	183
Sheridan	Lebanon Valley R. R	459
Do	P., C. & St. L. R. R	846
Shickshing	Del., L. & W. R. R	521
Shimer's	L. & L. R. R	289
Shimmels	T. & C. R. R	1,641
Ship Bridge	Pa. R. R	411
Shippen	B., N. Y. & P. R. R	1,206
Shippensburgh	Cumberland Valley R. R	654
Shippensburgh, B. M. on water table, N. W. corner Main & Railroad sts	U. S. C. & G. S	653
Shirleysburgh	E. Broadtop R. R	572
Shock's Mill	Pa. R. R	269
Shoemakersville	Phil. & R. R. R	314
Shohola	N. Y., L. E. & W. R. R	648
Shoo-Fly Tunnel	B. & O. R. R	1,621
Shugart's	L. C. & S. C. R. R	1,131
Shuman's Bridge, bench-mark on W. end	Pa. R. R	699
Shuman's Tunnel	C. & W. R. R	803
Sinking Springs	R. & C. R. R	348
Sinnemahoning	P. & E. R. R	794
Skippack	Perkiomen R. R	145
Slab Run	Bennett's Br. R. R	1,405

Station.	Authority.	Elevat
Slatington	Lehigh Valley R. R	[illegible]
Sligo	A. V. R. R	[illegible]
Do	W. Pa. R. R	
Small's Mills	P. B. R. R	
Smethport	McK. B. R. R	[illegible]
Smithborough	S. C. R. R	
Smith's	Lebanon Valley R. R	[illegible]
Smith's Ferry	Cleve. & P. R. R	6
Smithton	B. & O. R. R	7
Smyser's	N. C. R. R	3
Snow Shoe	B. & S. S. R. R	1,5
Snyder's	B. & O. R. R	78
Snydertown	N. C. R.R	49
Soda Works Station	A. V. R. R	761
Soho	B. & O. R. R	769
Somerset	S. & M. P. R. R	2,128
Somer's Lane	Tioga R. R	1,018
Somertown Station	N. Pa. R. R	156
Somestown	M. C. R. R	946
Southampton	B. & O. R. R	1,567
Southamptonville	Phil. & N. R. R	240
South Fork	Pa. R. R	1,485
South Mountain Railroad Junction	Cumberland Valley R. R	458
South Oil City Station	A. V. R. R	1,009
South Pennsylvania Junction	Cumberland Valley R. R	632
South Wilkesbarre	Lehigh Valley R. R	546
Spartansburgh	P., T. & B. R. R	1,457
Spindler's	Pa. R. R	404
Spragueville	Del., L. & W. R. R	490
Spring	E. & P. R. R	961
Spring Creek	P. & E. R. R	1,395
Springdale	W. Pa. R. R	749
Springfield	Phil. & R. R. R	69
Do	L. S. & M. S. R. R	664
Do	W. & R. R. R	645
Do....Railroad Junction	Pa. R. R	876
Spring Forge	Pa. R. R	455
Spring Garden, bench-mark	P. B. R. R	432
Springhill	W. C. & P. R. R	128
Do	Pa. R. R	749
Spring Mill	Phil. & R. R. R	53
Spring Run Village	Levels	877
Springton	E. B. & W. R. R	405
Springvale	P. B. R. R	734
Springville	M. R. R	1,257
Do	Pa. R. R	390
Spruce Creek	Pa. R. R	777
Standing Stone	Lehigh Valley R. R	702
Stanhope	S. & S. R. R	555
Star	D., A. V. & P. R. R	1,376
Starucca	N. Y., L. E. & W. R. R	1,470
State Line	B., N. Y. & P. R. R	1,443
Stauffer's	P. & C. R. R	1,057
Steiner's Mill	T. & C. R. R	1,428
Sterling	P. & E. R. R	916
Steuben	L. & L. R. R	333
Steven's Point	N. Y., L. E. & W. R. R	1,120
Stewart	P., T. & B. R. R	1,047
Stewart's Station	Pa. R. R	791
Stewart's Switch	P., T. & B. R. R	1,473
Stillwater	N. Y., L. E. & W. R. R	1,560
Stoneboro'	L. S. & M. S. R. R	1,171
Stoneboro's, junction with F division of L. S. & M. S. R. R	N. C. & F. R. R	1,171

Station.	Authority.	Elevation.
		Feet.
Stoneham	P. & E. R. R	1,347
Stone House	P. & K. C. R. R	1,089
Street Road	W. C. & P. R. R	252
Stroudsburgh	Del., L. & W. R. R	403
Sugar Creek	A. & G. W. R. R	1,014
Sugar Grove	A. & G. W. R. R	1,040
Sugar Notch	Lehigh Valley R. R	666
Do	L. & S. R. R	660
Sullivan	P., Ft. W. & C. R. R	765
Summerhill	Pa. R. R	1,557
Sunbury	N. C. R. R	444
Do..junction with Shamokin Branch N. C. R. R	N. C. R. R	441
Do..north line of depot building	N. C. R. R	444
Do..junction with D. W. & H. R. R	N. C. R. R	451
Do..Junction	D., H. & W. R. R	443
Do..junction of Shamokin Branch of N. C. R. R	P. & E. R. R	444
Susquehanna	N. Y., L. E. & W. R. R	914
Do	P. & E. R. R	534
Do	Pa. R. R	342
Susquehanna Bridge	Pa. R. R	350
Susquehanna Junction	N. Y., L. E. & W. R. R	962
Swansville	E. & P. R. R	735
Swarthmore	W. C. & P. R. R	125
Swatara Gap	L. & T. R. R	447
Swede Furnace	Phil. & R. R. R	66
Swiss Vale Station	Pa. R. R	922
Tamaqua	C. & W. R. R	804
Do	T. B. R. R	787
Tamenend	N. Valley R. R	1,287
Tarentum	W. Pa. R. R	757
Do	A. V. R. R	778
Tarr Farm	P., T. & B. R. R	1,062
Tatesville	H. & B. T. R. R	1,096
Taylorsville	B. & O. R. R	1,008
Taylorville	Del., L. & W. R. R	683
Teeple Town	P. & P. R. R	1,204
Temperanceville	P., C. & St. L. R. R	767
Temple	E. Pa. R. R	387
Templeton Station	A. V. R. R	824
Thompson	N. Y., L. E. & W. R. R	1,703
Do	P., V. & C. R. R	765
Thompson's	N. C. B. V. R. R	860
Do	P., T. & B. R. R	1,143
Thompson's Mills	B. & O. R. R	1,108
Thompsontown	Pa. R. R	419
Thorndale	Pa. R. R	313
Thurlow	P., W. & B. R. R	34
Tidioute	P., T. & B. R. R	1,112
Timonium	N. C. R. R	395
Tioga	Phila. & R. R. R	129
Do	S. C. R. R	896
Do	Tioga R. R	1,042
Tioga Junction	T. & E. & S. L. R. R	1,021
Tioga Village	C., C. & A. R. R	1,052
Tiona	P. & E. R. R	1,359
Tionesta	P., T. & B. R. R	1,060
Tipton	Pa. R. R	990
Titusville	P., T. & B. R. R	1,194
Do	Pithole Valley R. R	1,181
Do..Franklin street crossing	P., T. & B. R. R	1,194
Do..Washington street crossing	P., T. & B. R. R	1,194
Do..Monroe street crossing	P., T. & B. R. R	1,195

Station.	Authority.	Elevation.
		Feet.
Tivola	M. C. R. R	708
Tobyhanna	Del., L. & W. R. R	1,932
Tomhicken	D., H. & W. R. R	1,228
Ton Road	W. C. R. R	577
Topton Junction	E. Pa. R. R	485
Torren's Station	Pa. R. R	920
Toughkenamon	P. & B. C. R. R	283
Towanda	Lehigh Valley R. R	738
Do..switch at upper depot	B. R. R	738
Do..Barclay depot	B. R. R	725
Transfer	A. & G. W. R. R	993
Treichler's	L. & S. R. R	344
Tremont	L. & T. R. R	766
Trevorton Junction	N. C. R. R	428
Trexlertown	C. & F. R. R	411
Trowbridge	T. & E. & S. L. R. R	1,440
Troy	Bennett's Br. R. R	1,186
Do	N. C. R. R	1,148
Trunkeyville	P., T. & B. R. R	1,098
Tryonville	P., T. & B. R. R	1,318
Tryonville Junction	U. & T. R. R	1,320
Tuckerton	Phila. & R. R. R	298
Tullytown	Phila. & T. R. R	20
Tunkhannock	Lehigh Valley R. R	611
Tunkhannock, Junction with L. V. R. R.	M. R. R	611
Turner	L. S. & M. S. R. R	1,060
Turner's	N. C. & F. R. R	1,137
Turtle Creek Station	Pa. R. R	750
Tuscarora	Schuylkill Valley R. R	909
Do	Pa. R. R	429
Do...B. M. on top of stone foundation W. corner of water station	Pa. R. R	424
Tuscarora Mountain	Levels	1,926
Tussey's Mountain	Levels	1,984
Tyler's Station	Bennett's Br. R. R	1,232
Tylersville	M. R. R	1,400
Tyrone	L., C. & S. C. R. R	907
Tyrone Water Station	Pa. R. R	896
Ulster	Lehigh Valley R. R	743
Union	P. & E. R. R	1,270
Do	R. & C. R. R	399
Union City	A. & G. W. R. R	1,301
Do....P. & E. Junction	U. & T. R. R	1,270
Uniondale	N. Y., L. E. & W. R. R	1,670
Union Forge	L. & T. R. R	432
Union Furnace	Pa. R. R	799
Uniontown	Cumberland T'p'k	952
Do	P. & C. R. R	981
Do	S. W. Pa. Extension	990
Unionville	P. & E. Valley R. R	782
Upper Catasauqua	L. & S. R. R	284
Upper Lehigh	L. & S. R. R	1,802
Upton	Pa. R. R	430
Ursina	U. & N. F. R. R	1,342
Ursina Junction, U. & N. F. R. R. Junc	B. & O. R. R	1,406
Utica	A. & G. W. R. R	1,035
Valley Coal Mines	P. & C. R. R	1,035
Valley Forge	Phil. & R. R. R	98
Valley Store	Chester Valley R. R	295
Valley Works	S. W. Pa. R. R	1,075
Van Emman's	Chartiers R. R	922
Vanscoyoc	B. G. R. R	1,995
Do	T. & C. R. R	1,427
Venango	A. & G. W. R. R	1,163
Verona Station	A. V. R. R	746

Station.	Authority.	Elevation.
		Feet.
Vicksburgh	L., C. & S. C. R. R	529
Villa Nova	Pa. R. R	430
Vineyard	Pa. R. R	548
Volanté	N. C. & F. R. R	1,025
Vosburgh	Lehigh Valley R. R	615
Walbert	C. & F. R. R	550
Walker's Mill	P., C. & St. L. R. R	833
Walkertown	Pa. R. R	388
Wallace Run	P., Ft. W. & C. R. R	895
Wallacetown	T. & C. R. R	1,727
Wallingford	W. C. & P. R. R	168
Wall's Station	Pa. R. R	751
Walnut Bend	P., T. & B. R. R	1,023
Walnut Port	L. & S. R. R	371
Wampum	N. C. & B. V. R. R	801
Wanamie	L. & S. R. R	644
Warren	D., A. V. & P. R. R	1,200
Do	P. & E. R. R	1,186
Warrior Ridge	Pa. R. R	677
Warrior Run	Lehigh Valley R. R	716
Washington	C. & P. D. R. R	232
Do	Chartiers R. R	1,031
Do	B. & O. R. R	1,049
Do	Cumberland T'p'k	1,406
Waterford	Levels	630
Do	P. & E. R. R	1,193
Watersville (surf. of Little Pine Cr.)	J. S., P. C. & B. R. R	614
Watsontown	P. & E. R. R	481
Watt's	P. & C. R. R	991
Waverly	Lehigh Valley R. R	830
Waverly Junction	Lehigh Valley R. R	824
Wayne	Pa. R. R	405
Do	Phil. & R. R. R	156
Do	P. & E. R. R	572
Waynesburgh Station	E., B. & W. R. R	728
Webster's Mill	N. Y., L. E. & W. R. R	1,290
Weissport	L. & S. R. R	475
Wells	T. & E. & S. L. R. R	995
Wellsborough	C., C. & A. R. R	1,319
Wentzel's Station	S. & N. B. R. R	418
Wernersville	Lebanon Valley R. R	388
Wernway	McK. & B. R. R	1,861
Wesleyville	L. S. & M. S. R. R	697
West Alexandria	B. & O. R. R	1,043
Do	Cumberland Turnpike	1,797
West Brownsville, in street in front of hotel	P. V. & C. R. R	774
West Chester	W. C. & P. R. R	406
Do.....Gay street	W. C. R. R	420
Do.....Market street	W. C. R. R	414
Do.....junction with W.C. & P. R.R.	P. & B. C. R. R	133
West Conshohocken	Phil. & R. R.R	61
West Falls	Phil. & R. R. R	61
West Grove	P. & B. C. R. R	444
West Manayunk	Phil. & R. R. R	61
West Newton	B. & O. R. R	782
West Overton	P. & C. R. R	1,045
West Pittston	Del., L. & W. R. R	579
Westport	P. & E. R. R	691
West Spring Mill	Phil. & R. R. R	61
West Willow Station	L. & Q. R. R	449
Westwood Junction	M., H. & S. H. R. R	671
Wetmore	P. & E. R. R	1,804
Wheatland	E. & P. R. R	841

Station.	Authority.	Elevation.
		Feet.
Wheelerville	S. W. Pa. Extension	899
Whetham	P. & E. R. R	619
White Bear	W. & R. R. R	349
White Deer	C. & W. R. R	476
Whitehall	Lehigh Valley R. R	301
White Haven	Lehigh Valley R. R	1,143
Do	L. & S. R. R	1,120
White Horse	Chester Valley R. R	339
Do	S. & S. R. R	612
White Mills	N. Y., L. E. & W. R. R	940
White Rock	P. & C. R. R	907
White Rock Station	A. V. R. R	782
Wilcox	P. & E. R. R	1,527
Do	S., L. & S. R. R	1,123
Wildwood Station	A. V. R. R	746
Wilkesbarre	Lehigh Valley R. R	549
Wilkinsburgh Station	Pennsylvania R. R	923
Williamsburgh	Pennsylvania R. R	847
Do R. R. junction	Pennsylvania R. R	876
Williamsport Depot	C. & W. R. R	521
Do	J. S., P. C. & B. R. R	529
Do	N. C. R. R	532
Do	P. & E. R. R	527
Williamtown, Summit Br. Colliery	S. B. R. R	1,127
Willow Grove	Del., L. & W. R. R	516
Do	N. E. Pa. R. R	259
Do	P., C. & St. L. R. R	986
Wilmarth	P. & E. R. R	1,447
Wilmington	N. C. & F. R. R	928
Wilmore	Pa. R. R	1,557
Windsor	P. B. R. R	599
Wissahickon	Phil. & R. R. R	89
Wistar	P. & E. R. R	739
Wistar's Run	C. & P. D. R. R	229
Wolfton	D., H. & W. R. R	1,023
Wolverton	D., H. & W. R. R	442
Womelsdorf	Lebanon Valley R. R	456
Woodbine, B. M	P. B. R. R	294
Woodland	P. & B. C. R. R	212
Do	T. & C. R. R	1,472
Do	W. C. R. R	581
Wood's Run	P., Ft. W. & C. R. R	731
Woodstock, at crossing of creek	Mt. A. R. R	715
Woodville	Chartiers R. R	804
Wrightsville	York Branch P. R. R	257
Wyalusing	Lehigh Valley R. R	674
Wylie's	P., V. & C. R. R	759
Wynnewood	Pa. R. R	315
Wyoming Station	Del., L. & W. R. R	588
Wysanking	Lehigh Valley	718
Yeagertown	M. & C. Co. R. R	534
Yellow Spring	S. & S. R. R	777
Yerke's	Perkiomen R. R	134
York	N. C. R. R	366
Do	P. B. R. R	381
York Furnace	C. & P. D. R. R	177
York Haven	N. C. R. R	291
York (N. Central R. R)	York Branch Pa R. R	379
Youngsville	D., A. V. & P. R. R	1,197
Do	P. & E. R. R	1,211
Youngwood	S. W. Pa. R. R	957

RHODE ISLAND.

Station.	Authority.	Elevation.
		Feet.
.....	Prov. & Worces. R. R	88
ale	Prov. & Spring. R. R	104
ille	Prov. & Spring. R. R	134
aug	N. Y., Prov. & Bost. R. R.....	25
.....	Prov. & Worces. R. R	76
n	N. Y., Prov. & Boston R. R ..	43
gton	Prov., Warren & Bristol R. R.	22
y	Prov. & Worces. R. R.....	69
.....	Prov., Warren & Bristol R. R.	17
ia	N. Y., Prov. & Bost. R. R.....	89
Grove	Prov., Warren & Bristol R. R.	36
l Falls	Prov. & Worces. R. R.....	70
dale	P. & S. R. R.....	104
ett	N. Y., Prov. & Bost. R. R	29
ille	N. Y., Prov. & Bost. R. R	55
ville	Prov., Warren & Brist. R. R..	30
lle	Prov. & Spring. R. R	74
rovidence	Prov., Warren & Brist. R. R.	20
aville	Prov. & Spring. R. R	164
one	Prov. & Spring. R. R.....	114
rich	N. Y., Prov. & Bost. R. R....	32
t	Prov. & Worces. R. R	146
ville	Prov. & Spring. R. R	326
rove	N. Y., Prov. & Bost. R. R	55
on Junction	N. Y., Prov. & Bost. R. R	111
ale	Prov. & Worces. R. R.....	66
n	Prov. & Spring. R. R	74
le	Prov. & Worces. R. R.....	105
.....	Prov., Warren & Bristol R. R.	24
rt, Signal Station	U. S. Signal Office.....	44
norham, Signal Station	U. S. Signal Office.....	27
.....	N. Y., Prov. & Bost. R. R	44
od	N. Y., Prov. & Bost. R. R	58
d	Prov. & Spring. R. R	308
ille	Prov. & Spring. R. R	49
g	Prov. & Spring. R. R	396
cket	Bost. & Prov. R. R	79
.....	Prov. & Worces. R. R.....	73
ence	Bost. & Prov. R. R	10
.....	N. Y., Prov. & Bost. R. R	12
ond	N. Y., Prov. & Bost. R. R.....	87
Point	H., P. & F. R. R.....	93
nville	N. Y., P. & B. R. R	136
ield	Prov. & Spring. R. R	262
ln	Prov. & Spring. R. R	364
Falls	Prov. & Worces. R. R.....	68
n	Prov., Warren & Bristol R. R.	24
ly	N. Y., P. & B. R. R.....	33
ord Junction	N. Y., P. & B. R. R	89
awn	Prov. & Worces. R. R	56
River Junction	N. Y., Prov. & Bost. R. R	56
ocket	Prov. & Worces. R. R.....	159

SOUTH CAROLINA.

Station.	Authority.	Elevation.
		Feet.
Abbeville	C. & G. R. R.	535
Adjers	C., C. & A. R. R	540
Aiken	S. Carolina R. R	520
Allendale	P. R. R. R	192
Alston	C. & G. R. R.	259
Anderson	C. & G. R. R.	764
Appleton	P. R. R. R	262
Augusta Bridge	S. Carolina R. R	185
Barr's	C., C. & A. R. R	458
Batesburg	C., C. & A. R. R	657
Beaufort Wharf	U. S. C. & G. S	7
Beaufort	P. R. R. R	20
Beldoc	P. R. R. R	116
Belton	C. & G. R. R	896
Birds Crossing	C. & G. R. R	760
Blacks	A. & R. A. L. R. R	772
Blackstock	C., C. & A. R. R	621
Blackville	S. Carolina R. R	301
Blair's	C. & G. R. R	293
Blythewood	C., C. & A. R. R	505
Bookman's	C. & G. R. R	204
Branchville	S. Carolina R. R. R	140
Brunson's	P. R. R. R	139
Cæsar's Head, hotel	U. S. C. & G. S	3,118
Carson's Hills	S. Carolina R. R	370
Chappell's	C. & G. R. R	402
Charleston	S. Carolina R. R	16
Do	S. & C. R. R	9
Do... Signal Station	U. S. Signal Office	52
Chester	C., C. & A. R. R	543
Clinton	C. & G. R. R	687
Columbia	C. & G. R. R	227
Do...Blading street Station	C., C. & A. R. R	296
Do...S. C. R. R. Station	C., C. & A. R. R	233
Do...Old Junction	C., C. & A. R. R	195
Cornwalls	C., C. & A. R. R	638
Dankins	C. & G. R. R	286
Dead Fall	C., C. & A. R. R	156
Donalds	C. & G. R. R	760
Dysons	C. & G. R. R	420
Early Branch	P. R. R. R	79
Early Depot	U. S. C. & G. S	1,131
Ellenton	P. R. R. R	149
Enone	A. & R. A. L. R. R	987
Fish Dam	C. & G. R. R	498
Fort Mill	C., C. & A. R. R	336
Frosts Mill	C. & G. R. R	179
Furman University	U. S. C. & G. S	1,074
Garey's Lane	C. & G. R. R	580
Glassy	U. S. C. & G. S	1,699
Glassy Rock	U. S. C. & G. S	3,076
Glendale's	C. & G. R. R	708
Golden Grove	C. & G. R. R	900
Grantsville	C., C. & A. R. R	243
Greenville	A. & R. A. L. R. R	976
Do	C. & G. R. R	989
Do...Episcopal Church	U. S. C. & G. S	1,105
Do...Baptist Church	U. S. C. & G. S	966

Station.	Authority.	Elevation.
		Feet.
wood	C. & G. R. R	671
Tree	U. S. C. & G. S	17
a	C. & G. R. R	532
s	C. & G. R. R	714
ck	U. S. C. & G. S	3,230
Path	C. & G. R. R	810
	C. & G. R. R	297
onboro Depot	S. & C. R. R	17
	C. & G. R. R	576
ton	C., C. & A. R. R	670
ville	C. & G. R. R	583
rs	C., C. & A. R. R	546
ns	C., C. & A. R. R	331
ds	C. & G. R. R	602
eys	C., C. & A. R. R	200
ns	C. & G. R. R	589
ille	C., C. & A. R. R	645
	C., C. & A. R. R	574
gton	C., C. & A. R. R	370
tone	A. & R. A. L. R. R	787
ns	C. & G. R. R	619
lin	U. S. C. & G. S	1,328
Mill	C., C. & A. R. R	443
	P. R. R. R	135
gomery's	C. & G. R. R	199
erry	C. & G. R. R	502
Market	C. & G. R. R	630
y Six	C. & G. R. R	570
eburgh	S. Carolina R. R	265
ett	C. & G. R. R	718
s Point	U. S. C. & G. S	29
	U. S. C. & G. S	2,054
s, T. O	C. & G. R. R	704
	C. & G. R. R	291
lett	A. & R. A. L. R. R	857
eton	A. & R. A. L. R. R	879
o	C. & G. R. R	817
ns C. H	U. S. C. & G. S	1,162
nsville	A. & R. A. L. R. R	1,094
ont	C. & G. R. R	794
cle	U. S. C. & G. S	3,436
ria	C. & G. R. R	330
Royal	P. R. R. R	11
erity	C. & G. R. R	551
Mountain	U. S. C. & G. S	3,569
Spring	C., C. & A. R. R	647
way	C., C & A. R. R	626
tson	C., C. & A. R. R	562
Hill	C., C. & A. R. R	669
y Mountain	U. S. C. & G. S	1,029
rity	A. & R. A. L. R. R	1,006
a, old town	C. & G. R. R	386
c	C. & G. R. R	512
a	A. & R. A. L. R. R	954
s	C., C. & A. R. R	444
on	P. R. R. R	21
on	C. & G. R. R	315
rds	C. & G. R. R	1,000
r Street	C. & G. R. R	470
sons	C., C. & A. R. R	604
lile Mountain	U. S. C. & G. S	1,595
s	C., C. & A. R. R	545
anburgh	A. & R. A. L. R. R	787
o.....Baptist Church	U. S. C. & G. S	887

Station.	Authority.	Elevation.
		Feet.
Spartanburgh, S. U. & C. D. R. R	C. & G. R. R	693
Do St. John's College	U. S. C. & G. S	875
Strothers	C. & G. R. R	292
Summerville	S. Carolina R. R	68
Table Rock	U. S. C. & G. S	3,124
Thicketty	U. S. C. & G. S	1,271
Tuccoa	U. S. C. & G. S	1,778
Trenton	C., C. & A. R. R	620
Union	C. & G. R. R	579
Vancluse	C., C. & A. R. R	299
Varnesville	P. R. R. R	101
Union	C. & G. R. R	579
Walhalla	U. S. C. & G. S	985
Do. Church	U. S. C. & G. S	1,118
Wards	C., C. & A. R. R	673
Warrens	C., C. & A. R. R	545
Westminster	A. & R. A. L. R. R	919
Whitakers	A. & R. A. L. R. R	907
White Oak	C., C. & A. R. R	548
Williamston	C. & G. R. R	840
Willow Oak	U. S. C. & G. S	135
Winnsborough	C., C. & A. R. R	543
Wofford	U. S. C. & G. S	878
Woodwards	U. S. C. & G. S	562
Yemassee	S. Carolina R. R	25
Do	U. S. C. & G. S	23
Do. crossing of S. & C. R. R	P. R. R. R	25

TENNESSEE.

Station.	Authority.	Elevation.
		Feet.
Albany	L., N., S. & N. A. R. R.	564
Allens	L., N., S. & N. A. R. R.	353
Amnicola	W. & A. R. R.	695
Annadell	C. S. R. R.	1,249
Aspen Hill	L., N., S. & N. A. R. R.	648
Athens	E. T., Va. & Ga. R. R.	933
Atwood	L., N., S. & N. A. R. R.	428
Bailey's	L., N., S. & N. A. R. R.	664
Bartlett	L., N., S. & N. A. R. R.	263
Belfast	D. R. V. R. R.	814
Bells	L., N., S. & N. A. R. R.	320
Benton Switch	L., N., S. & N. A. R. R.	374
Bethel	M. & O. R. R.	463
Big Hatchie	L., N., S. & N. A. R. R.	286
Big Sandy	L., N., S. & N. A. R. R.	345
Big Stone Mountain	Guyot	5,614
Bolivar	M. C. & T. R. R.	430
Bond's	L., N. S. & N. A. R. R.	314
Boyce	C. S. R. R.	694
Branden	L., N., S. & N. A. R. R.	307
Brentwood	L., N., S. & N. A. R. R.	698
Bristol	N. & W. R. R.	1,689
Brown's Road	L., N. S. & N. A. R. R.	476
Brownsville	L., N., S. & N. A. R. R.	333
Bryant	D. R. V. R. R.	671
Buck Lodge	L., N., S. & N. A. R. R.	711
Buford's	L., N., S. & N. A. R. R.	702
Caledonia	L., N., S. & N. A. R. R.	421
Campbells	L., N., S. & N. A. R. R.	686
Carbondale	L., N., S. & N. A. R. R.	362
Cargrove	L., N., S. & N. A. R. R.	246
Carroll	M. & O. R. R.	375
Carter's Creek	L., N., S. & N. A. R. R.	602
Cave Springs	C. S. R. R.	697
Chattanooga	C. S. R. R.	684
Do.....Signal Station	U. S. Signal Office	783
Cherry's	L., N., S. & N. A. R. R.	535
Chewalla	Memphis & C. R. R.	409
Chickamauga	W. & A. R. R.	685
Chilhowee Mountain	Guyot	2,452
Chimzy Knob	Guyot	5,588
Chitwood	C. S. R. R.	1,332
Clarksville	L., N., S. & N. A. R. R.	392
Cleveland	E. T., Va. & Ga. R. R.	878
Clifton	L., N., S. & N. A. R. R.	353
Clingman's Dome	Guyot	6,660
Colliersville	Memphis & C. R. R.	379
Collins, Mount	Guyot	6,188
Columbia	L., N., S. & N. A. R. R.	644
Corner Knob	Guyot	5,246
Corraine	C. S. R. R.	813
Coulterville	C. S. R. R.	712
Crockett	M. & O. R. R.	296
Cross Knob	Guyot	5,931
Cumberland	L., N., S. & N. A. R. R.	355
Curtis, Mount	Guyot	6,568
Dark's Mill	L., N., S. & N. A. R. R.	574
Darwin	C. S. R. R.	767

Station.	Authority.	Elevation.
		Feet.
Dayton	C. S. R. R	715
Dodsen's	L., N., S. & N. A. R. R	804
Duck River	L., N., S. & N. A. R. R	578
Dudley's	L., N., S. & N. A. R. R	494
Dyer	M. & O. R. R	365
Eagle Top	Guyot	5,433
Edgefield Junction	L., N., S. & N. A. R. R	414
Elk Ridge Summit	D. R. V. R. R	789
Emory Gap	C. S. R. R	840
Erin	L., N., S. & N. A. R. R	404
Ewells	L., N., S. & N. A. R. R	747
Ewings	D. R. V. R. R	730
Fair Grounds	L., N., S. & N. A. R. R	439
Falcon	M. & O. R. R	433
Fayetteville	D. R. V. R. R	656
Forney Ridge Peak	Guyot	5,087
Fountain Head	L., N., S. & N. A. R. R	778
Franklin	L., N., S. & N. A. R. R	617
Gadsden	L., N., S. & N. A. R. R	406
Gallatin	L., N., S. & N. A. R. R	494
Galloway	L., N., S. & N. A. R. R	277
Germantown	Memphis & C. R. R	378
Gibson	L., N., S. & N. A. R. R	378
Givin	L., N., S. & N. A. R. R	344
Glen Alice	C. S. R. R	826
Glen Mary	C. S. R. R	1,289
Grand Junction	Memphis & C. R. R	575
Gravel Pit	L., N., S & N. A. R. R	360
Graysville	C. S. R. R	737
Great Bald Mountain	Guyot	4,922
Great Frog Mountain	Guyot	4,226
Greenville	E. T., Va. & Ga. R. R	1,581
Guyot, Mount	Guyot	6,636
Hampton's	L., N., S. & N. A. R. R	513
Hangover	Guyot	5,600
Harris	D. R. V. R. R	579
Harwell	L., N., S. & N. A. R. R	617
Helenwood	C. S. R. R	1,400
Henderson	M. & O. R. R	427
Hendersonville	L., N., S. & N. A. R. R	446
Henry	L., N., S. & N. A. R. R	518
Do. Mount	Guyot	6,373
Hills	D. R. V. R. R	600
Humboldt	L., N., S. & N. A. R. R	329
Hurricane	L., N., S. & N. A. R. R	630
Jackson	M. & O. R. R	425
Johnson	E. T., Va. & Ga. R. R	1,643
Johnsonville	N. & N. R. R	368
Jones	L., N., S. & N. A. R. R	314
Jonesboro	E. T., Va. & Ga. R. R	1,734
Keeling	D. R. V. R. R	735
Kenton	M. & O. R. R	309
King's Point	C. S. R. R	696
Knoxville	E. T., Va. & Ga. R. R	900
Do...Signal Station	U. S. Signal Office	980
La Grange	Memphis & C. R. R	531
Lansing	C. S. R. R	1,197
Laurel Peak	Guyot	5,922
Lecoute, Mount	Guyot	6,612
Lester's	L., N., S. & N. A. R. R	723
Lewisburgh	D. R. V. R. R	727
Lookout	C. S. R. R	692
London	E. T., Va. & Ga. R. R	816
Love, Mount	Guyot	6,443

Station.	Authority.	Elevation.
		Feet.
Luftee Knob	Guyot	6,232
Lynnville	L., N., S. & N. A. R. R	734
McElwee	C. S. R. R	788
McKenzie	L., N., S. & N. A. R. R	470
McNairy	M. & O. R. R	454
Madison	L., N., S. & N. A. R. R	466
Malory's	L., N., S. & N. A. R. R	674
Mason	L., N., S. & N. A. R. R	296
Master Knob	Guyot	6,013
Matthews	L., N., S. & N. A. R. R	398
Medon	M. C. & T. R. R	420
Melhorn	C. S. R. R	833
Melville	C. S. R. R	711
Memphis, city base	City engineer	117
Do	L., N., S. & N. A. R. R	227
Do	Miss. & Tenn. R. R	258
Do	M. & C. R. R	244
Do..Signal Station	U. S. Signal Office	321
Middleburgh	M. C. & T. R. R	537
Middleton	Memphis & C. R. R	408
Milan	L., N., S. & N. A. R. R	408
Miller	C. S. R. R	847
Mingus, Mount	Guyot	5,694
Mitchellville	L., N., S. & N. A. R. R	748
Morristown	E. T., Va. & Ga. R. R	1,283
Moscow	Memphis & C. R. R	352
Nashville, city base	City engineer	232
Do	L., N., S. & N. A. R. R	409
Do	N. & N. R. R	430
Do	N. & D. R. R	445
Do...H. W. Cumberland R	City engineer	397
Do...L. W. Cumberland R	City engineer	340
Do...Signal Station	U. S. Signal Office	507
Neighbor	Guyot	5,771
Nemo	C. S. R. R	917
New Market	E. T., Va. & Ga. R. R	1,057
New River	C. S. R. R	1,215
North Bald Mountain	Guyot	4,711
Oakdale Junction	C. S. R. R	812
Oak Hill	L., N., S. & N. A. R. R	355
Oakland, top of ridge	E., H. & N. R. R	880
Oconee Mountain	Guyot	6,135
Oneida	C. S. R. R	1,454
Overtons	L., N., S. & N. A. R. R	533
Owens	L., N., S. & N. A. R. R	677
Palmyra	L., N., S. & N. A. R. R	367
Paris	L., N. S. & N., A. R. R	447
Parks	D. R. V. R. R	650
Peapoint	L., N., S. & N. A. R. R	256
Peck's Peak	Guyot	6,232
Petersburgh	D. R. V. R. R	727
Pilot Knob	L., N., S. & N. A. R. R	447
Pilot Mountain	C. S. R. R	1,348
Pinson	M. & O. R. R	384
Pleasant Grove	L., N., S. & N., A. R. R	719
Pocahontas	Memphis & C. R. R	394
Porters	L., N., S. & N. A. R. R	352
Prospect	L., N., S. & N. A. R. R	588
Pulaski	L., N., S. & N. A. R. R	641
Ramer	M. & O. R. R	416
Rathburn	C. S. R. R	788
Raven Knob	Guyot	6,230
Retrio	C. S. R. R	747
Reynolds	L., N., S. & N. A. R. R	724

Station.	Authority.	Elevation.
		Feet.
Richland	L., N., S. & N. A. R. R	774
Rives	M. & O. R. R	301
Robbins	C. S. R. R	1,382
Rock Creek	C. S. R. R	753
Rockwood	C. S. R. R	885
Roddy	C. S. R. R	784
Rosboro'	D. R. V. R. R	708
Rossville	Memphis & C. R. R	316
Rutherford	M. & O. R. R	321
Safford, Mount	Guyot	6,535
Sailor's Rest	L., N., S. & N. A. R. R	364
Saulsbury	Memphis & C. R. R	536
Saunderesville	L., N., S. & N. A. R. R	545
Sedgemore	C. S. R. R	1,401
Shelby's	L., N., S. & N. A. R. R	249
Shepard's	L., N., S. & N. A. R. R	279
Silver Creek	D. R. V. R. R	702
Snaky Mountain	Guyot	5,195
South Berlin	D. R. V. R. R	775
South Tunnel	L., N., S. & N. A. R. R	804
Spring City	C. S. R. R	781
Springdale	L., N., S. & N. A. R. R	256
Springville	L., N., S. & N. A. R. R	340
Staunton	L., N., S. & N. A. R. R	303
Steele's	L., N., S. & N. A. R. R	365
Stevenson	L., N., S. & N. A. R. R	709
Stewarts	L., N., S. & N. A. R. R	464
Sunbright	C. S. R. R	1,359
Talleys	D. R. V. R. R	789
Taylor's	L., N., S. & N. A. R. R	307
Tennessee Ridge	L., N., S. & N. A. R. R	720
Thermometer Knob	Guyot	6,157
Thompsons	L., N., S. & N. A. R. R	777
Three Brothers (highest)	Guyot	5,907
Thunderhead	Guyot	5,520
Thunderknob	Guyot	5,682
Trenton	M. & O. R. R	321
Trezerant	L., N., S. & N., A. R. R	443
Tricorner Knob	Guyot	6,188
Turkey Knob	Guyot	4,740
Union	E. T., Va. & Ga. R. R	1,457
Union City	M. & O. R. R	346
Vernon Furnace	L., N., S. & N. A. R. R	367
Veto	L., N., S. & N. A. R. R	619
Wales	L., N., S. & N. A. R. R	668
Ward	D. R. V. R. R	732
Wauhatchie	Ala. G. S. R. R	690
Wells	L., N., S. & N. A. R. R	242
West Harpeth	L., N., S. & N. A. R. R	670
Whitesburgh	E. T., Va. & Ga. R. R	1,214
Withe	L., N., S. & N. A. R. R	271

TEXAS.

Station.	Authority.	Elevation.
		Feet.
Albany	T. C. R. R	1,401
Alexander	T. C. R. R	1,141
Allen	H. & T. C. R. R	669
Alleyton	G., H. & S. A. R. R	193
Ames	T. & N. O. R. R	78
Angus	H. & T. C. R. R	448
Aquilla	T. C. R. R	531
Arcola	I. & G. N. R. R	66
Arroyo Escondido	Toner	2,115
Austin	I. & G. N. R. R	477
Do. (Freight Depot)	H. & T. C. R. R	501
Do. (Passenger Depot)	H. & T. C. R. R	513
Baird	T. & P. R. R	1,524
Banks	G., C. & S. F. R. R	702
Beaumont	T. & N. O. R. R	26
Belknap, Fort	Med. Dept. U. S. A	1,600
Belleville	G., C. & S. F. R. R	262
Bells	Mo., Kans. & Tex. R. R	675
Belmont Farm	Toner	722
Belton	G., C. & S. F. R. R	620
Benchley	H. & T. C. R. R	306
Big Mineral		1,228
Big Sandy, cross. T. & T. R. R. at grade	T. & P. R. R	336
Bliss, Fort	Med. Dept. U. S. A	3,830
Do....Astronomical monument	Wheeler	3,623
Bluff	Toner	180
Blum	G., C. & S. F. R. R	592
Bonham	T. & P. R. R	582
Borden	G., H. & S. A. R. R	303
Boston	Smithsonian Inst	600
Brackettville, Signal Station	U. S. Signal Office	1,137
Brazos	G., C. & S. F. R. R	70
Bremond	H. & T. C. R. R	467
Brenham	G., C. & S. F. R. R	301
Do	H. & T. C. R. R	350
Briar Creek	Toner	378
Brown, Fort	Mexican Boundary Survey	165
Browns	L. & S. V. R. R	286
Brownsville	R. G. R. R	33
Do...Signal Station	U. S. Signal Office	43
Bryan	H. & T. C. R. R	371
Buffalo	I. & G. N. R. R	387
Buffalo Springs	Smithsonian Inst	1,800
Burton	H. & T. C. R. R	436
Caldwell	G., C. & S. F. R. R	411
Calvert	H. & T. C. R. R	337
Camden	L. & S. V. R. R	234
Cameron	G., C. & S. F. R. R	407
Canyon	T. & P. R. R	1,015
Carbon	T. C. R. R	1,592
Castroville	Mexican Boundary Survey	672
Do....Signal Station	U. S. Signal Office	778
Cedar Grove	Toner	60
Chadbourne, Fort	Med. Dept. U. S. A	2,120
Chapel Hill	H. & T. C. R R	337
Chappel Hill	Smithsonian Inst	542
Chenango	I. & G. N. R. R	46

Station.	Authority.	Elevation.
		Feet.
China Grove	I. & G. N. R. R	50
Chocolate	G., C. & S. F. R. R	56
Cisco (T. & P. crossing)	T. C. R. R	1,611
Clark, Fort	Med. Dept. U. S. A	1,000
Clarksville	T. & P. R. R	464
Clear Lake	G., C. & S. F. R. R	68
Cleburne	G., C. & S. F. R. R	933
Clifton	G., C. & S. F. R. R	670
Columbia	I. & G. N. R. R	34
Columbus	G., H. & S. A. R. R	213
Comanche Spring	Toner	2,874
Concho, Signal Station	U. S. Signal Office	1,888
Concordia, Camp	Smithsonian Inst	3,600
Concrete	G., W. T. & P. R. R	246
Cone	G., C. & S. F. R. R	375
Converse	G., H. & S. A. R. R	721
Corpus Christi	Med. Dept. U. S. A	20
Corsicana	H. & T. C. R. R	427
Do...Signal Station	U. S. Signal Office	448
Courtney	H. & T. C. R. R	201
Crabb	G., C. & S. F. R. R	91
Crawford	G., C. & S. F. R. R	687
Crockett	I. & G. N. R. R	350
Croghan, Fort	Med. Dept. U. S. A	1,000
Crosby	T. & N. O. R. R	50
Cross-Roads	Smithsonian Inst	672
Cross Timbers	I. & G. N. R. R	75
Do	T. & N. O. R. R	52
Cuero	G., W. T. & P. R. R	177
Cypress City	H. & T. C. R. R	155
Daingerfield	E. L. & R. R. R. R	403
Dallas, crossing H. & T. C. R. R. at grade	T. & P. R. R	466
Do. Junction W. R. R	T. & P. R. R	432
Davidson	G., C. & S. F. R. R	255
Davis, Fort	Med. Dept. U. S. A	4,700
Do..Signal Station	U. S. Signal Office	4,918
Dayton	T. & N. O. R. R	89
De Kalb	T. & P. R. R	422
Deloraine	Toner	960
Denison	Mo., Kans. & Tex. R. R	722
Do. low water Red River		525
Do. Junction H. & T. C. R. R	Mo., Kans. & Tex. R. R	723
Do. Signal Station	U. S. Signal Office	767
Deveres	T. & N. O. R. R	66
Dodge	I. & G. N. R. R	409
Double Mountain	Petermann	3,824
Douglas	I. & G. N. R. R	307
Dublin	T. C. R. R	1,449
Duncan, Fort	Med. Dept. U. S. A	1,460
Dyer	G., C. & S. F. R. R	116
Eagle Lake	G., H. & S. A. R. R	203
Eagle Pass, Signal Station	U. S. Signal Office	800
Eagle Spring	Mex. Boundary Survey	4,536
East Barnard	G., H. & S. A. R. R	123
Eastland	T. & P. R	1,299
East Santa Clara	G., H. & S. A. R. R	633
East Waco	H. & T. C. R. R	395
Edinburg	Mex. Boundary Survey	422
Elciario	Toner	3,607
Elgin	H. & T. C. R. R	600
Elkhart	I. & G. N. R. R	390
Elmo	T. & P. R. R	501
El Paso	S. P. R. R	3,720
Do. Signal Station	U. S. Signal Office	3,370

Station.	Authority.	Elevation.
		Feet.
Englewood	I. & G. N. R. R	420
Ennis	H. & T. C. R. R	547
Escondido Spring	Mex. Boundary Survey	2,806
Eureka	H. & T. C. R. R	69
Ewell, Fort	Med. Dept. U. S. A	200
Ferris	H. & T. C. R. R	472
Flatonia	G., H. & S. A. R. R	473
Footes	I. & G. N. R. R	273
Forney	T. & P. R. R	469
Fort Worth	T. & P. R. R	623
Fouler	T. C. R. R	581
Fredericksburgh, Signal Station	U. S. Signal Office	1,742
Frontera	Mex. Boundary Survey	3,796
Fulton	Toner	242
Galveston	G., C. & S. F. R. R	3
Do...Signal Station	U. S. Signal Office	40
Garrett	H. & T. C. R. R	563
Gates, Fort	Toner	1,000
Gause	I. & G. N. R. R	376
Georgetown	I. & G. N. R. R	753
Giddings	H. & T. C. R. R	536
Gladewater	T. & P. R. R	324
Goliad	Smithsonian Inst	50
Gonzales (Court-House)	G., W. T. & P. R. R	276
Do..Guadalupe River, ordinary height of	G. W. T. & P. R. R	232
Gordon	T. & P. R. R	822
Graham, Fort	Med. Dept. U. S. A	900
Grand Saline	T. & P. R. R	400
Grapeland	I. & G. N. R. R	480
Grays Lake	I. & G. N. R. R	136
Griffin, Signal Station	U. S. Signal Office	1,243
Groesbeck	H. & T. C. R. R	481
Guadalupe Pass	P. R. R. Reports	5,717
Gum Island	H. & T. C. R. R	96
Gum Springs	L. & S. V. R. R	301
Hall's	G., C. & S. F. R. R	33
Haltonis	I. & G. N. R. R	141
Hammond	H. & T. C. R. R	415
Harrisburgh	Toner	38
Harrison	H. & T. C. R. R	467
Hartley's	I. & G. N. R. R	120
Harwood	G., H. & S. A. R. R	463
Hearne	I. & G. N. R. R	305
Heidenheimer	G., C. & S. F. R. R	546
Helena	Smithsonian Inst	600
Hempstead	H. & T. C. R. R	245
Henrietta, Signal Station	U. S. Signal Office	915
Hico	T. C. R. R	1,007
Hitchcock	G., C. & S. F. R. R	17
Hocheim, top of divide above	G., W. T. & P. R. R	355
Hockley	H. & T. C. R. R	225
Honey Grove	T. & P. R. R	682
House	G., C. & S. F. R. R	63
Houston	H. & T. C. R. R	37
Do	I. & G. N. R. R	53
Howard's Spring	Mex. Boundary Survey	2,054
Howe	H. & T. C. R. R	859
Howta	H. & T. C. R. R	281
Hubbard Timbers	T. & P. R. R	1,874
Hueco Pass	P. R. R. Reports	5,450
Do	R. R. Surveys	5,027
Hueco Tanks	P. R. R. Reports	3,935
Humboldt	Toner	887

Station.	Authority.	Elevation.
		Feet.
Hurd's Pass	R. R. Surveys	4,419
Hutchins	H. & T. C. R. R	472
Independence Spring		4,778
Indianola, Signal Station	U. S. Signal Office	26
Inge, Fort	Med. Dept. U. S. A	845
Iredell	T. C. R. R	881
Jackass Prairie	R. G. R. R	19
Jacksborough, Signal Station	U. S. Signal Office	1,133
Jacksonville	I. & G. N. R. R	525
Jefferson, Junction E. L. R. R	T. & P. R. R	221
Jewett	I. & G. N. R. R	496
Junction, I. R. R. with S. A. & M. G. R. R	G., W. T. & P. R. R	25
Keechi	I. & G. N. R. R	282
Kelley's	I. & G. N. R. R	381
Kilgore	I. & G. N. R. R	371
Kingsbury	G., H. & S. A. R. R	616
Kinney	G., C. & S. F. R. R	399
Kiowa Peak	Petermann	2,895
Kopperl	G., C. & S. F. R. R	574
Kosse	H. & T. C. R. R	504
Lake	I. & G. N. R. R	314
Lambert	T. & P. R. R	1,011
Lancaster	Med. Dept. U. S. A	2,350
Laredo	Toner	806
Do. Signal Station	U. S. Signal Office	401
Larissa	Smithsonian Inst	755
Lavaca	Toner	17
Ledbetter	H. & T. C. R. R	464
Leon	T. C. R. R	1,269
Leon Spring	Mex. Boundary Survey	2,807
Liberty	T. & N. O. R. R	48
Lincoln, Fort	Med. Dept. U. S. A	900
Lindale	I. & G. N. R. R	547
Llano Estacado		3,200 to 4,700
Long Point	Toner	400
Long View, cross. I. & G. N. R. R. at grade	T. & P. R. R	336
Lovelady	I. & G. N. R. R	300
Luling	G., H. & S. A. R. R	418
Lyons	G., C. & S. F. R. R	315
McDade	H. & T. C. R. R	589
McIntosh, Fort	Med. Dept. U. S. A	806
McKavett, Fort	Med. Dept. U. S. A	2,060
Do.... Signal Station	U. S. Signal Office	1,217
McKinney	H. & T. C. R. R	615
Manor	H. & T. C. R. R	557
Marion	G., H. & S. A. R. R	566
Marlin Falls	H. & T. C. R. R	394
Marquez	I. & G. N. R. R	410
Marshall, Junction of J. & S. Division	T. & P. R. R	371
Martin Scott, Fort	Med. Dept. U. S. A	1,300
Mason, Fort	Med. Dept. U. S. A	1,200
Mason's Creek	L. & S. V. R. R	241
Mason, Signal Station	U. S. Signal Office	1,620
Medley's	I. & G. N. R. R	132
Melissa	H. & T. C. R. R	692
Meridian	G., C. & S. F. R. R	791
Merrill, Fort	Med. Dept. U. S. A	150
Mesquite	T. & P. R. R	494
Mexia	H. & T. C. R. R	537
Milano	I. & G. N. R. R	475
Do Junction	G., C. & S. F. R. R	500
Miller	H. & T. C. R. R	426
Millheim	G., C. & S. F. R. R	169

Station.	Authority.	Elevation.
		Feet.
:an	H. & T. C. R. R	300
Creek	Smithsonian Inst	600
ola	I. & G. N. R. R	402
)o..Junction I. & G. N. R. R	T. & P. R. R	419
io	P. R. R. Reports	3,830
y	G., C. & S. F. R. R	783
an	T. C. R. R	734
it Airy	T. C. R. R	1,439
ang	G., C. & S. F. R. R	47
)o..Springs	Toner	1,982
sota City	H. & T. C. R. R	219
es	I. & G. N. R. R	411
ried	Toner	800
Boston	T. & P. R. R	387
ı, Fort	Toner	1,100
ı Franklin Mountain	Wheeler	7,069
es	Mex. Boundary Survey	932
woods	I. & G. N. R. R	280
el Cuerbo	P. R. R. Reports	3,893
Escondido	Toner	2,311
ge	T. & N. O. R. R	10
ton	I. & G. N. R. R	507
:r Creek	I. & G. N. R. R	38
)	H. & T. C. R. R	573
;ed Caves	Mex. Boundary Survey	952
tine	I. & G. N. R. R	495
er	H. & T. C. R. R	471
	T. & P. R. R	592
ı Creek	Toner	256
ı Spring		3,098
	H. & T. C. R. R	483
tom Hill	Med. Dept. U. S. A	2,300
ıs	I. & G. N. R. R	377
o Punta	Toner	744
e Junction	G., H. & S. A. R. R	63
burg	E. L. & R. R. R. R	402
)	H. & T. C. R. R	667
Isabel Depot	R. G. R. R	8
Fort	Toner	15
ie	I. & G. N. R. R	87
dio del Norte		2,779
on	P. R. R. Reports	790
's Creek	G., W. T. & P. R. R	105
ry	G., C. & S. F. R. R	235
i	Mex. Boundary Survey	856
nan, Fort	Med. Dept. U. S. A	3,710
.om	Toner	147
.on	G., H. & S. A. R. R	93
;er	T. & P. R. R	1,294
an Falls	H. & T. C. R. R	385
Branch	I. & G. N. R. R	226
Gap	T. & P. R. R.	1,539
River City	Toner	572
ca de la Palma	R. G. R. R	27
	H. & T. C. R. R	473
ardson	H. & T. C. R. R	643
land	H. & T. C. R. R	377
mond	G., H. & S. A. R. R	73
)o	G., C. & S. F. R. R	105
gold Barracks	Med. Dep., U. S. A	521
rside	I. & G. N. R. R	169
nson's	L. & S. V. R. R	256
dale	I. & G. N. R. R	469

Station.	Authority.	Elevation
		Fe
Roger's	G., C. & S. F. R. R	
Rosenberg Junction	G., C. & S. F. R. R	
Ross	H. & T. C. R. R	
Round Rock	I. & G. N. R. R	
San Antonio	G., H. & S. A. R. R	
Do.....Signal Station	U. S. Signal Office	
Sandy Point	I. & G. N. R. R	
San Elciario	Mex. Boundary Survey	3,(
San Filipe	Mex. Boundary Survey	8
Schulenburg	G., H. & S. A. R. R	3
Sealy	G., C. & S. F. R. R	16
Seco	Toner	68
Sequin	G., H. & S. A. R. R	559
Shelden	T. & N. O. R. R	57
Sherman, crossing H. & T. C. R. R. at grade	T. & P. R. R	747
Signal Staff	R. G. R. R	7
Sisterdale	Smithsonian Inst	1,320
Sour Lake	T. & N. O. R. R	47
Spring	I. & G. N. R. R	126
Springfield	Smithsonian Inst	4,500
Stockton, Fort, Signal Station	U. S. Signal Office	3,050
Stork's	I. & G. N. R. R	385
Sulphur Springs	E. L. & R. R. R. R	462
Summit Ridge	H. & T. C. R. R	285
Sutton	H. & T. C. R. R	372
Tehuacana	Toner	482
Temple Junction	G., C. & S. F. R. R	695
Terrell	T. & P. R. R	514
Terrett, Fort	Med. Dep. U. S. A	1,320
Terry	T. & N. O. R. R	23
Thompson	G., C. & S. F. R. R	68
Do	H & T. C. R. R	122
Thornton	H. & T. C. R. R	496
Tinge	Toner	892
Trinity	I. & G. N. R. R	234
Troupe	I. & G. N. R. R	467
Twin Butte Gap	T. & P. R. R	1,469
Tyler	I. & G. N. R. R	531
Union Hill	Med. Dept. U. S. A	542
Upson	G., H. & S. A. R. R	698
Uvalde, Signal Station	U. S. Signal Office	891
Valley Mills	G. C. & S. F. R. R	592
Van Alstyne	H. & T. C. R. R	803
Verde, Camp	Med. Dept. U. S. A	1,400
Victoria Depot	G., W. T. & P. R. R	87
Virginia Point	G., C. & S. F. R. R	5
Waelder	G., H. & S. A. R. R	378
Waller Waller	H. & T. C. R. R	252
Wallis	G., C. & S. F. R. R	131
Walnut Springs	T. C. R. R	901
Washington	Smithsonian Inst	360
Waverly	I. & G. N. R. R	365
Weatherford	T. & P. R. R	864
Webberville, Parson's Seminary	Smithsonian Inst	394
Weimar	G., H. & S. A. R. R	420
Wellborn	H. & T. C. R. R	324
West Bernard	G., H. & S. A. R. R	163
West Creek	G. W. T. & P. R. R	126
Westfield	I. & G. N. R. R	114
Wheelock	Smithsonian Inst	450
White Cloud	Toner	255
Whitehouse	I. & G. N. R. R	471
Whitewright	Mo., Kans. & Tex. R. R	748

Station.	Authority.	Elevation.
		Feet.
hitney	T. C. R. R.	586
ilkins	L. & S. V. R. R	271
illis	I. & G. N. R. R	381
ills' Point	T. & P. R. R.	530
insborough	E. L. & R. R. R. R.	532
ortham	H. & T. C. R. R.	482
orth, Fort	Toner	629
llow Prairie	G., C. & S. F. R. R	458

UTAH.

Station.	Authority.	Elevation.
		Feet.
Adairville	Powell	4,400
Adam's Head	Powell	10,360
Adamsville	Wheeler	5,600
Akanaquint	P. R. R. Reports	4,457
Alice, Mount	Powell	9,540
Alum Beds	D. & R. G. R. R	5,907
Ambey	C. P. R. R	4,721
American Fork	U. C. R. R	4,554
Do	P. R. R. Reports	4,596
Do	Wheeler	4,578
Do	Powell	4,580
Do	U. S. R. R	4,608
Anderson Peak	Powell	10,710
Antelope Island	Wheeler	6,660
Antelope Peak	Powell	7,100
Antelope Spring	Powell	5,390
Do	Wheeler	5,850
Do	Wheeler	6,702
Do (upper)	Wheeler	7,144
Aquarius Plateau	Powell	10,000 11,000
Aspen Lake	Powell	8,927
Atkinson	Summit County R. R	6,462
Averitt Spring	Summit County R. R	8,580
Awapa Plateau	Powell	8,000 10,000
Bald Head	Powell	9,643
Bald Mountain	Powell	8,430
Bald Mountains	King	11,975
Baldy Peak	Wheeler	11,730
Bangs, Mount	Powell	7,950
Bare Bush Point (Wasatch Plateau)	Powell	10,250
Bartels, Mount	Powell	10,050
Barton Mountain	Wheeler	9,854
Bean Spring	Powell	9,230
Bear Lake	Hayden	5,911
Bear River Bridge	Wheeler	4,197
Bear Valley	Wheeler	7,071
Do	Powell	6,600 7,200
Beaver	Powell	5,970
Do. astronomical station	Wheeler	5,916
Beaver Dam Mountains	Powell	8,100
Beaver Valley	D. & R. G. R. R	4,886
Bechler, Mount	Hayden	9,716
Belknap, Mount	Powell	12,200
Do	Wheeler	11,894
Berry's Springs	Wheeler	2,810
Big Cottonwood	U. S. R. R	4,261
Big Dam Springs	Wheeler	4,317
Big Narrows	D. & R. G. R. R	6,020
Big Springs	D. & R. G. R. R	4,234
Black Cap Butte	Powell	6,530
Black Rock	U. W. R. R	4,263
Do	U. C. R. R	4,799
Do bench-mark	U. S. Geol. Survey	4,250
Blacktail Peak	King	9,943
Blue Creek	C. P. R. R	4,379

Station.	Authority.	Elevation.
		Feet.
Blue Gate Mesa	Powell	5,900
Blue Gate Plateau, north	Powell	6,800
Do south	Powell	6,800 7,300
Blue Mountain	Powell	11,071
Blue Spring	Wheeler	7,131
Bonneville		4,310
Bovine	C. P. R. R	4,347
Bowl Valley	Powell	7,600 7,700
Box Elder Peak	Wheeler	9,542
Bingham Junction	D. & R. G. R. R	4,366
Brian, Mount	Powell	11,178
Brian's Head	Powell	11,260
Brigham City	C. P. R. R	4,226
Do	U. & N. R. R	4,321
Do	Wheeler	4,476
Brown's Park	Powell	5,500 5,800
Brown's Peak	Powell	5,392
Bruin Point	Powell	10,150
Buckhorn Flats	D. & R. G. R. R	5,697
Buckhorn Junction	D. & R. G. R. R	5,692
Buck Horn Spring	Powell	5,770
Buckhorn Spring	Wheeler	5,688
Bullionville Road Crossing	D. & R. G. R. R	5,548
Burro Peak	King	12,834
Cachill	U. & N. R. R	4,971
Call's Fort	U. & N. R. R	4,255
Cameron, Fort	Wheeler	6,058
Camp Floyd Pass	Simpson	5,234
Carmel, Mount	Powell	5,241
Castle Gate	D. & R. G. R. R	6,322
Castle Rock	U. P. R. R	6,249
Castle Valley	Powell	5,000 6,500
Castle Valley Junction	D. & R. G. R. R	5,795
Cedar City	Wheeler	5,726
Cedar Mountain Pass	P. R. R. Reports	6,364
Cedar Ridge Summit	D. & R. G. R. R	6,228
Cedar Spring	Wheeler	5,100
Cedar Summit	D. & R. G. R. R	4,984
Cedar Valley	Powell	5,300 6,000
Centerville	U. C. R. R	4,253
Cherry Creek	D. & R. G. R. R	5,299
Circle Valley	D. & R. G. R. R	6,055
Do	Powell	6,000 6,300
Circleville	Wheeler	5,624
City of Rocks	Wheeler	6,078
Clarkson	Hayden	4,800
Clarkston	Powell	5,930
Clayton's Peak	King	11,889
Clear Creek	D. & R. G. R. R	6,229
Clear Creek Mountain	Wheeler	9,132
Coal Point	Powell	6,760
Coalville	Summit Co. R. R	5,596
Colob Plateau	Powell	8,000 9,000
Copenhagen	Hayden	4,999
Corinne	C. P. R. R	4,232
Do signal station	U. S. Signal Office	4,249
Corn Creek Settlement	Powell	4,800

Station.	Authority.	Elevation.
		Feet.
Carson Peak	King	9,630
Cottonwood		4,200
Cottonwood Springs	D. & R. G. R. R	4,661
Consharem	Powell	6,850
Cove Creek Fort	Powell	6,000
Cove Fort Junction	D. & R. G. R. R	5,477
Cox Peak		13,250
Craggy Head	Powell	8,250
Crescent Gap	D. & R. G. R. R	4,720
Crittenden, Fort	Toner	4,860
Croyden	U. P. R. R	5,250
Cub River Bridge		4,542
Culmination Point	Powell	9,700
Curlew	Wheeler	4,397
Dalton, Mount	Powell	10,480
Danishtown	Wheeler	4,400
Deadman's Springs		6,782
Deep Creek	D. & R. G. R. R	5,025
Do	Wheeler	5,237
Do	King	5,127
Delano, Mount	Powell	12,240
Dellenbaugh, Mount	Powell	6,650
Deseret	U. C. R. R	4,541
Do	Wheeler	4,642
Desert Mountain	Wheeler	8,175
Desert Spring	Wheeler	5,887
Desert Springs	Powell	5,610
Deweyville	U. & N. R. R	4,328
Do	Wheeler	4,415
Diamond City	Wheeler	6,369
Diamond Valley	Powell	4,300 4,800
Dilley's Ranch, Hansel Spring	Wheeler	5,043
Dodoquiba Spring	P. R. R. Reports	4,659
Douglas, Camp	Wheeler	5,024
Do ..... astronom. mont. by level	Wheeler	4,905
Draper	U. C. R. R	4,443
Do	U. S. R. R	4,513
East Fork Sevier	D. & R. G. R. R	7,714
East Salient	Powell	7,490
East Tavaputs Plateau	Powell	5,500 9,700
Echo	U. P. R. R	5,480
Echo Park (mouth Yampa River)	Powell	5,080
Ellen, Mount	Powell	11,410
Ellenore, Mount	Powell	7,690
Ellen Spring	Powell	9,940
Ellsworth, Mount	Powell	8,150
El Vado de los Padres (Colorado River)	Wheeler	3,194
Do	Powell	3,220
Emma's Park	Powell	7,370
Emmons, Mount	King	13,694
Ephraim	Wheeler	5,633
Ephraim Point	Powell	8,690
Epley Butte	Powell	5,860
Escalante City	Powell	5,700
Escalante Desert	Powell	5,000 5,500
E. T. City	D. & R. G. R. R	4,272
Eureka City	Wheeler	6,400
Eyrie Peak	Wheeler	9,458
Fairfield	Wheeler	4,866
Farmington	U. C. R. R	4,261
Faust	Wheeler	5,296

Station.	Authority.	Elevation.
		Feet.
Fillmore	Wheeler	6,025
Do	Powell	5,100
Fish Lake	Powell	8,790
Fish Lake Mountain	Powell	11,578
Fish Lake	Wheeler	8,763
Do	Powell	8,792
Fish Lake Plateau	Powell	10,500 11,600
Fish Lake Valley	Powell	8,750 8,850
Fish Spring	Wheeler	6,269
Flaming Gorge	Powell	5,820
Floyd, Camp (now Fairfield)	Med. Dept., U. S. A.	4,860
Do do	Wheeler	4,867
Fountain Green	Wheeler	5,874
Frances Point	Powell	10,430
Frisco	U. C. R. R.	6,315
Germania	D. & R. G. R. R.	4,296
Do	U. C. R. R.	4,242
Gilbert's Peak	King	13,687
Do. timber-line on	King	11,100
Glencoe	Wheeler	5,221
Do. Bridge	Powell	5,237
Glenwood	Powell	5,300
Goshen	Powell	4,482
Gooseberry Valley (south end)	Powell	8,600 8,700
Gould's Ranch	Powell	4,052
Granite Rock	D. & R. G. R. R.	4,356
Grantville	D. & R. G. R. R.	4,251
Grass Creek Junction	Summit Co. R. R.	5,520
Grass Valley	Powell	6,200 7,500
Do	Wheeler	6,857
Graves Valley	Powell	4,300
Gray Head	Powell	9,640
Great Sage Plain (mean elevation)	Hayden	6,500
Great Salt Lake (May 16, 1873)	U. S. Geological Survey	4,218
Green River	D. & R. G. R. R.	4,021
Gunnison	Powell	5,118
Do	Wheeler	5,144
Do. Tunnison's House	Powell	5,120
Gunnison	Powell	5,134
Gunnison's Crossing (Green River)	Powell	4,083
Gunnison Plateau	Powell	7,000 9,800
Do (highest point)	Powell	9,864
Gunnison Point	Powell	6,000
Gunnison Valley	Powell	4,100 4,500
Gunsight Mountain	Hayden	8,306
Hague Spring	Powell	5,450
Half-way House	U. W. R. R.	4,326
Hampton's Bridge	Hayden	4,300
Do. Station	Wheeler	4,700
Hanging Rock	Toner	5,974
Hansel Pass	Wheeler	5,138
Hardy's	D. & R. G. R. R.	5,487
Harry, Mount	Powell	11,300
Hawawah Spring	Wheeler	5,455
Hay Patch Spring	Wheeler	5,590
Hay Spring	Wheeler	5,092
Heber Mountain	King	10,138
Do	Powell	9,850

Station.	Authority.	Elevation.
		Feet.
Hebron	Powell	5,450
Do	Wheeler	5,47[illegible]
Hell's Kitchen	Powell	7,64[illegible]
Hensell's Spring		5,37[illegible]
Hildreth's Ranch	Wheeler	4,30[illegible]
Hilgard, Mount	Powell	11,46[illegible]
Hillers, Mount	Powell	10,65[illegible]
Hodges, Mount	King	13,50[illegible]
Holden	Powell	5,05[illegible]
Holmes, Mount	Powell	7,9[illegible]
Hooper's Ranch, Skull Valley	Wheeler	4,3[illegible]
Horeb, Mount	King	7,8[illegible]
Horn Head	Powell	10,9[illegible]
Hornsilver	D. & R. G. R. R.	4,[illegible]
Horn Silver Mine	U. C. R. R.	6,[illegible]
Hot Springs	U. &. N. R. R.	4,[illegible]
Hyde Park	Hayden	4,500
Do	Wheeler	4,412
Indian Head (Tavaputs Plateau)	Powell	9,810
Indian Spring	Wheeler	5,284
Iron City	Wheeler	6,099
Iron Spring	Powell	5,420
Island Park	Powell	5,000
Jackson's Mills	Wheeler	5,150
Jennings Springs	D. & R. G. R. R.	4,695
Joe's Valley	Powell	7,000 9,000
Do	Wheeler	8,420
Johnson's Pass	Whitney	6,237
Johnson Spring	Powell	5,470
Juab	U. C. R. R	5,019
Juab Valley	Powell	5,000 6,000
Kaibab Plateau	Powell	6,000 8,000
Kaiparowits Peak	Powell	9,180
Kaiparowits Plateau	Powell	6,000 7,500
Do (east end)	Powell	7,489
Kanab	Wheeler	5,078
Do (Hamblin's)	Powell	4,925
Do (Adam's)	Powell	4,917
Do (Farnsworth's)	Powell	4,947
Kanab Plateau		7,000
Kanab Springs	Powell	5,310
Kanara	Powell	5,450
Do	Wheeler	5,419
Kansas		6,304
Kansas Prairie	Simpson	6,242
Do	Wheeler	6,225
Katharine's Peak	Powell	9,902
Kaysville	U. C. R. R.	4,298
Kelton	C. P. R. R	4,223
Do	Wheeler	4,222
Key	D. & R. G. R. R.	4,243
Kimball's	D. & R. G. R. R.	6,365
Kimball, Mount	Wheeler	7,777
King's Meadows	Powell	5,500
Knowlton	D. & R. G. R. R.	4,323
Lake		4,223
Lake Butte, near Laketown	Wheeler	6,346
Lake Range (highest peak)	Powell	7,429

Station.	Authority.	Elevation.
		Feet.
Laketown	Hayden	6,000
Do....Walstrom's shop	Wheeler	5,993
Lake View Peak	Hayden	7,795
La Motte Peak	King	12,892
Leeds	Powell	3,400
Lee's Springs, in Fremont Pass	Wheeler	6,883
Lehi	U. C. R. R	4,517
Do	U. S. R. R	4,586
Do	Wheeler	4,596
Do	D. & R. G. R. R	4,544
Lemington	U. C. R. R	4,674
Leonora Peak	Powell	8,900
Lewiston Peak	Wheeler	10,623
Lime Pass	King	10,740
Little Bitter Creek Springs	Powell	6,858
Little Cottonwood	U. S. R. R	4,288
Do....do	Wheeler	4,359
Little Creek Peak	Powell	10,010
Little's Ranch	Powell	7,000
Logan	Hayden	4,509
Do	U. & N. R. R	4,507
Do	Wheeler	4,533
Logan Peak	Hayden	10,004
Do..do	Powell	7,950
Lone Peak	King	11,295
Lone Rock Valley	P. R. R. Reports	4,400 5,400
Long Valley	Powell	5,000 6,000
Lost Creek Valley	Powell	5,500 6,000
Lovendahls	U. C. R. R	4,277
Lucin	C. P. R. R	4,498
McCready's Meadow	Powell	6,240
Mammoth Mill	Wheeler	6,947
Mansard Point	Powell	6,290
Markagunt Plateau	Powell	8,000 11,000
Maroni Peak	Powell	8,010
Marsh's Peak	King	12,410
Marvine, Mount	Powell	11,600
Marysvale	D. & R. G. R. R	5,808
Do	Powell	5,810
Marysvale Peak	Powell	10,359
Masuk Plateau	Powell	7,700 8,200
Matlin	C. P. R. R	4,597
Meadow Creek	Wheeler	5,992
Meadowville	Hayden	6,200
Mendon	U. & N. R. R	4,459
Do	Wheeler	4,553
Midget Crest	Powell	11,414
Milford	U. C. R. R	4,908
Mill Creek Station	Wheeler	6,504
Miller Creek	D. & R. G. R. R	5,505
Mill Fork	D. & R. G. R. R	5,791
Mills	U. C. R. R	4,852
Mill Spring		6,504
Mill Station	Wheeler	6,504
Mona	U. C. R. R	4,859
Do	Powell	4,900
Monroe	Powell	5,380
Monroe Peak	Powell	11,240
Montpelier	Hayden	5,793

Station.	Authority.	Elevation.
		Feet.
Monument	C. P. R. R	4,227
Moraine Valley	Powell	9,000 to 10,000
Morgan	U. C. R. R	4,220
Moses, Mount	Wheeler	8,725
Mounds House	Powell	4,940
Mountain City	Powell	5,760
Mountain Meadow	Wheeler	5,741
Mountain Spring	Powell	5,741
Mount Carmel	Powell	5,250
Mount Pleasant	Wheeler	5,875
Do	Powell	5,900
Musinia Peak	Powell	10,940
Naomi Peak	Wheeler	9,951
Narrows	D. & R. G. R. R	4,498
Navajo Well Point	Powell	6,460
Nebo, Mount	Wheeler	11,992
Do	Powell	11,680
Neels	U. C. R. R	4,356
Nephi	Powell	5,130
Do	U. C. R. R	5,056
Do	P. R. R. Reports	4,938
Do	Wheeler	4,920
Newfoundland Mountain	Wheeler	7,045
New Point	Powell	5,120
Nomansville Summit	D. & R. G. R. R	6,605
North Logan Peak	Hayden	10,004
North Ogden	Wheeler	4,509
North Ogden Mountain	Wheeler	9,695
North Promontory Peak	Wheeler	7,134
North Willard	Wheeler	4,276
Oak Creek	Wheeler	5,158
Oak Pass	Simpson	7,200
Oak Springs		6,790
Observatory Peak	Wheeler	9,589
Odoriferous Spring	Powell	6,610
Ogden, junc. with U. P. & U. C. R. R	C. P. R. R	4,303
Do astronomical observatory	Wheeler	4,374
Pahrea Summit	D. & R. G. R. R	7,731
Panguitch	Wheeler	6,273
Do	Powell	6,560
Panguitch Lake	Powell	8,130
Panguitch Hayfields	Powell	7,000 to 7,500
Paradise	Wheeler	4,863
Paragoonah	Wheeler	6,222
Pana	Wheeler	4,562
Park City	Summit Co. R. R	6,851
Parowan	Powell	5,970
Do	Wheeler	5,910
Parowan Valley	Powell	5,900 to 6,200
Patmos Head	Powell	9,830
Paunsagunt Plateau	Powell	8,000 to 9,300
Payson	P. R. R. Reports	4,541
Do	Wheeler	4,523
Do	U. C. R. R	4,548
Do	U. S. R. R	4,613
Pelican Peak	Powell	7,430
Pennell, Mount	Powell	11,320
Penellen Pass	Powell	7,730
Penellen Spring	Powell	7,730
Petersen	U. P. R. R	4,907

Station.	Authority.	Elevation.
		Feet.
Phillips Village		4,327
Pilot Peak	Wheeler	10,900
Pilot Springs	Wheeler	4,704
Pine Valley	Powell	5,200 to 6,000
Pine Valley Mountain	Powell	10,250
Pink Cliff	Powell	9,260
Pipe Springs	Powell	4,890
Pleasant Grove	U. C. R. R	4,495
Do	U. S. R. R	4,557
Pleasant, Mount	Wheeler	5,875
Do.....do..(Mrs. Morrison's house)	Powell	5,898
Pleasant Valley P. O	Wheeler	6,064
Pleasant Valley	Powell	7,500 to 8,200
Plymouth	Hayden	4,500
Point Carbon	King	11,443
Point Nelson	Powell	10,670
Portage	Hayden	4,700
Potato Valley	Wheeler	5,700 to 7,000
Prattville	Powell	5,240
Promontory	C. P. R. R	4,905
Do.....Mount	Wheeler	7,459
Provo	D. & R. G. R. R	4,517
Do	U. C. R. R	4,456
Do	U. S. R. R	4,520
Do	Wheeler	4,567
Do., office U. S. R. R	Powell	4,547
Provo Peak (Wasatch Mountains)	Wheeler	11,066
Do..... do	Powell	11,000
Rabbit Valley	Powell	6,800 to 7,500
Randolph	Hayden	6,442
Rattlesnake Point	D. & R. G. R. R	5,701
Red Cañon Summit	D. & R. G. R. R	7,910
Red Plateau	Powell	6,000 to 7,500
Richey's Ranch	Powell	6,169
Richfield	Wheeler	5,283
Richmond	Hayden	4,537
Do	U. & N. R. R	4,536
Do	Wheeler	4,656
Riverside	U. C. R. R	4,583
Rockfield	D. & R. G. R. R	5,232
Rocky Rest Spring	Powell	4,510
Round Lake Valley	Powell	5,500 to 6,000
Round Prairie	Simpson	5,571
Round Valley	Powell	5,300 to 6,000
Rush Valley	Simpson	5,200
Do	Wheeler	5,234
Do	Powell	4,500 to 5,300
Sahara Plateau	Powell	4,500 to 5,200
Saint George	Powell	2,880
Saint Mary's	Toner	6,200
Salem (Pondtown)	Powell	4,580
Salina	D. & R. G. R. R	5,182
Salina Summit	D. & R. G. R. R	7,927
Salt Lake City	D. & R. G. R. R	4,228
Do	Powell	4,354

Station.	Authority.	Elevation.
		Feet.
Salt Lake City	U. C. R. R	4,261
Do.....base merid. monument	U. S. Geol. Survey	4,33[illegible]
Do.....Signal Station	U. S. Signal Office	4,34[illegible]
Do.....observatory pier	U. S. Geol. Survey	4,33[illegible]
Salt Lake Desert	Powell	4,20[illegible] to 5,00[illegible]
Salt Lake Valley		4,2[illegible] to 4,56[illegible]
Salt Spring Ranch	Wheeler	4,6[illegible]
Salt Wells	Wheeler	4,2[illegible]
Sandy	U. C. R. R	4,[illegible]
Do	U. S. R. R	4,[illegible]
San Francisco Spring	Wheeler	6,[illegible]
San Pete Valley	Powell	5,[illegible] to 6,[illegible]
San Rafael River	D. & R. G. R. R	5,331
San Rafael Valley	Powell	4,100 to 4,200
Santa Clara Settlement	Powell	2,900
Santaquin	Powell	5,030
Do	U. C. R. R	4,813
Do	U. S. R. R	4,884
Santaquin Mountains (Wasatch Range)	Powell	9,670
Saw Tooth Narrows	D. & R. G. R. R	6,527
Scipio	Powell	5,260
Do	Wheeler	5,115
Scofield	D. & R. G. R. R	7,832
Section Ridge	King	8,268
Session Settlement	P. R. R. Reports	4,183
Sevier Cañon	D. & R. G. R. R	5,482
Sevier Desert	Powell	5,000 to 5,400
Sevier Lake	Wheeler	4,600
Sevier Lake Desert	Wheeler	4,874
Sevier Pass (west side)	Wheeler	4,768
Sevier Plateau	Powell	9,000 to 10,300
Sevier River Bridge	Powell	4,888
Do	Wheeler	5,283
Sheep Salient	Powell	5,560
Sheep Trough Spring	Powell	4,600
Shinarump	Powell	5,330
Shoonesburg	Wheeler	3,921
Short Cut Pass	Simpson	5,347
Silver City		6,369
Skull Valley	Simpson	4,850
Do	Wheeler	4,356
Skumpah	Wheeler	6,142
Skutumpa or Clarkston	Powell	5,930
Smithfield	Hayden	4,565
Do	U. & N. R. R	4,562
Do	Wheeler	4,623
Soldier Summit	D. & R. G. R. R	7,465
Solitude Peak	Powell	8,800
Sorenson Waterpocket	Powell	5,630
South Promontory Mountain	Wheeler	7,460
South Tent (Wasatch Plateau)	Powell	11,240
Spanish Fork	D. & R. G. R. R	4,865
Do	U. C. R. R	4,493
Do	U. S. R. R	4,556
Spanish Fork Peak	Powell	9,970
Spanish Valley	Powell	3,900 to 5,300
Split Mountain	King	8,865

Station.	Authority.	Elevation.
		Feet.
Springville	D. & R. G. R. R	4,566
Do	U. C. R. R	4,451
Do	U. S. R. R	4,525
Stevenson, Camp		5,930
Stevenson, Mount	Powell	10,840
Strawberry Peak	Powell	9,020
Strawberry Valley	Powell	7,400 to 8,000
Sulphur Springs	D. & R. G. R. R	6,493
Do (Escalante Desert)	Powell	5,101
Do	Wheeler	5,400
Summit (Bradbury's)	D. & R. G. R. R	7,190
Summit Valley	Powell	6,500 to 7,200
Swallow Park	Powell	6,400
Table Cliff	Powell	10,070
Table Cliff Plateau	Powell	10,000 to 10,400
Tantalus Point (Aquarius Plateau)	Powell	10,670
Ten-Mile House	Wheeler	5,086
Terminus	U. W. R. R	4,991
Terrace	C. P. R. R	4,544
Terrace Mountains	King	6,900
Terrel's Ridge	Powell	11,380
Terry's Ranch	Powell	5,660
Thistle Creek	D. & R. G. R. R	5,043
Thistle Creek Peak	Powell	8,510
Thistle Valley	Powell	5,500 to 6,200
Thousand Lake Mountain	Powell	11,240
Three Lakes	Powell	5,380
Three Trees Point	Powell	6,990
Timpanogos Mountain	King	11,957
Tingley Peak	Powell	10,260
Tintic	Wheeler	4,833
Tit Mesa	Powell	7,650
Tockcwanna Peak	King	13,458
Tomasaki, Mount	Hayden	12,271
Tongue Salient	Powell	9,980
Tooele Peak	Wheeler	10,396
Toponce Ranch	Wheeler	4,583
Toquerville	Powell	3,100
Trumbull, Mount	Powell	8,187
Tuilla Valley	P. R. R. Reports	4,487
Tukuhnikavatz, Mount	Hayden	10,815
Tununk Plateau	Powell	6,500 to 7,000
Twin Peak	King	11,563
Uinta	U. P. R. R	4,519
Uinta Agency		6,133
Uinta River (mouth of)	Powell	4,670
Uinta Valley	Powell	4,700 to 6,000
Un-kar-pagu	Powell	11,595
Upper Kanab	Powell	6,890
Utah Lake (mean stage)	U. S. R. R	4,499
Utah Lake Valley	Simpson	4,540
Utah Valley	Powell	4,500 to 5,200
Ute Peak	King	8,067
Van Buren's Ranch	Powell	5,990
Virgin Peak	Powell	8,000
Waas, Mount	Hayden	12,561
Do	Powell	12,320

Station.	Authority.	Elevation.
		Feet.
Waldsburg	Powell	5,600
Walter, Mount	Powell	9,860
Wanship	Summit Co. R. R	5,864
Warm Spring	Wheeler	3,807
Wasatch	U. P. R. R	6,833
Wasatch Plateau	Powell	8,000 to 11,000
Washi-pah-ghum Spring		4,412
Washington	Powell	2,720
Do	Wheeler	2,906
Waterpocket Fold	Powell	6,000 to 7,500
Weber	U. P. R. R	5,090
Wellsville	Hayden	4,565
Do	Wheeler	4,600
Wheeler's Crag	Powell	7,850
White Knob	Powell	6,800
White Lake	Powell	7,950
White Rock Spring, Skull Valley	King	5,542
White Sulphur Spring		5,201
White Valley	Simpson	4,360
Do	Wheeler	4,436
Willard City	U. & N. R. R	4,352
Do	Wheeler	4,288
Do	Hayden	4,350
Wilson's Peak	King	13,235
Wilson Spring	D. & R. G. R. R	4,330
Wonsits Valley	Powell	4,700 to 5,000
Bradford Station	Conn. & Pass. R. R. R	410
Wood's Crossing	U. C. R. R	4,299
Workman's Ranch	Powell	4,080
Yampa Plateau	Powell	6,000 to 7,000
York	Powell	4,980
Do	U. S. R. R	4,957
Young Point	Powell	8,880
Young's Ranch	Wheeler	5,642

VERMONT.

Station.	Authority.	Elevation.
		Feet.
Alburgh	Cent. Vt. R. R	127
Alburgh Springs	Cent. Vt. R. R	119
Anthony, Mount	Geol. Survey of Vt	2,505
Ascutney, Mount	Geol. Survey of Vt	3,320
Bald Mountain	Geol. Survey of Vt	3,124
Barnet	Conn. & Pass. R. R. R	466
Barre Junction	M. & W. R. R. R	515
Barton	Conn. & Pass. R. R. R	959
Bartonsville	Cent. Vt. R. R	469
Bellows Falls	Cheshire R. R	305
Do	Cent. Vt. R. R	276
Bethel	Cent. Vt. R. R	576
Bolton	Cent. Vt. R. R	345
Boltonville	M. & W. R. R. R	624
Bradford Station	Conn. & Pass. R. R. R	410
Braintree	Cent. Vt. R. R	784
Brandon	Cent. Vt. R. R	353
Brattleboro	Vt. Valley R. R	228
Brookville	Cent. Vt. R. R	301
Burke, Mount	Petermann	3,500
Burlington	Cent. Vt. R. R	109
Do....Signal Station	U. S. Signal Office	268
Cambridge Centre Junction	Port. & Ogden R. R	473
Camel's Hump	Guyot	4,088
Cavendish	Cent. Vt. R. R	921
Charlotte	Cent. Vt. R. R	161
Chester	Cent. Vt. R. R	501
Clarendon	Cent. Vt. R. R	639
Colchester	Cent. Vt. R. R	326
Connecticut River Bridge, grade	Cent. Vt. R. R	352
Cuttingsville	Cent. Vt. R. R	1,011
Danville	Port. & Ogden R. R	1,375
Derbyline	Conn. & Pass. R. R. R	1,056
Dummerston	Vt. Valley R. R	263
East Berkshire	Missisquoi R. R	441
East Fairfield	Port. & Ogden R. R	421
East Hardwick	Port. & Ogden R. R	1,087
East Highgate	Port. & Ogden R. R	365
East Montpelier	M. & W. R. R. R	720
East Putney	Vt. Valley R. R	296
East Saint Johnsbury	P. & O. R. R	795
East Thetford Depot	Conn. & Pass. R. R. R	413
East Wallingford	Cent. Vt. R. R	1,195
Enosburg Falls	Missisquoi R. R	436
Eolus, Mount	Geol. Survey of Vt	3,148
Equinox Mountain	Guyot	3,872
Essex Junction	Cent. Vt. R. R	350
Fairfield	Port. & Ogden R. R	369
Fairlee Station	Conn. & Pass. R. R. R	438
Fletcher	Port. & Ogden R. R	431
Gassetts	Cent. Vt. R. R	715
Georgia	Cent. Vt. R. R	365
Greensborough	Port. & Ogden R. R	1,166
Groton	M. & W. R. R. R	773
Groton Pond	M. & W. R. R. R	1,094
Hardwick	Port. & Ogden R. R	881
Hartford	Woodstock R. R	485
Hartland	Cent. Vt. R. R	423

Station.	Authority.	Elevation.
		Feet.
Healdville	Cent. Vt. R. R	1,379
Herrick	Geol. Survey of Vt	2,661
Do	Guyot	2,692
Highgate Centre	Port. & Ogden R. R	312
Hinsdale	Ashuelot R. R	341
Hogback	Guyot	3,648
Holly, Mount	Cent. Vt. R. R	1,359
Hyde Park	Port. & Ogden R. R	586
Island Pond	Grand Trunk R. R	1,181
Ives Pond (West Danville)	Port. & Ogden R. R	1,553
Jay Peak	Geol. Survey of Vt	4,018
Johnson	Port. & Ogden R. R	541
Killington Peak	Guyot	4,221
Lake Champlain	Port. & Ogden R. R	101
Lanesville	M. & W. R. R. R	1,347
Leicester Junction	Cent. Vt. R. R	351
Lincoln, Mount	Guyot	4,078
Ludlow	Cent. Vt. R. R	1,061
Lydonville	Conn. & Pass. R. R. R	741
McIndoe's Depot	Conn. & Pass. R. R. R	488
McIndoe's Falls	Conn. & Pass. R. R. R	455
Mansfield, Mount	Guyot	4,430
Marshfield	M. & W. R. R. R	1,140
Middlebury	Cent. Vt. R. R	341
Middlesex	Cent. Vt. R. R	541
Milton	Cent. Vt. R. R	361
Montpelier	M. & W. R. R. R	484
Montpelier Junction	Cent. Vt. R. R	529
Morrisville	Port. & Ogden R. R	657
Newbury Depot	Conn. & Pass. R. R. R	426
New Haven	Cent. Vt. R. R	291
North Ferrisburg	Cent. Vt. R. R	131
Northfield	Cent. Vt. R. R	739
North Hartland	Cent. Vt. R, R	387
North Sheldon	Missisquoi R. R	393
North Stratford Station	Geol. Survey of N. H	915
North Thetford Depot	Conn. & Pass. R. R. R	402
Norwich Depot	Conn. & Pass. R. R. R	406
Pico Peak	Guyot	3,954
Piermont Station	Conn. & Pass. R. R. R	440
Pittsford	Cent. Vt. R. R	327
Plainfield	M. & W. R. R. R	752
Potato Hill	Geol. Survey of Vt	3,966
Proctorsville	Cent. Vt. R. R	921
Prospect Mountain	Geol. Survey of Vt	2,690
Putney	Vt. Valley R. R	257
Quechee	Woodstock R. R	650
Randolph	Cent. Vt. R. R	698
Richford	Missisquoi R. R	473
Richmond	Cent. Vt. R. R	328
Rockingham	Cent. Vt. R. R	333
Rouse's Point	Cent. Vt. R. R	120
Roxbury	Cent. Vt. R. R	1,016
Royalton	Cent. Vt. R. R	517
Rutland	Cent. Vt. R. R	519
Rutland Centre	Cent. Vt. R. R	490
Ryegate, Depot platform	Conn. & Pass. R. R. R	472
Saint Albans	Cent. Vt. R. R	390
Saint Johnsbury	Conn. & Pass. R. R. R	591
Salisbury	Cent. Vt. R. R	346
Saltash Mountain	Geol. Survey of Vt	2,850
Sharon	Cent. Vt. R. R	507
Shelburne	Cent. Vt. R. R	151
Sheldon	Port. & Ogden R. R	374

Station.	Authority.	Elevation.
		Feet.
ewsbury Peak	Guyot	3,845
ke Mountain	Geol. Survey of Vt	1,310
th Royalton	Cent. Vt. R. R	508
th Ryegate	M. & W. R. R. R	724
th Vernon	Vt. Valley R. R	261
ingfield Station, Summit at	Sullivan Co. (N. H.) R.R.	374
rling, Mount	Geol. Survey of Vt	3,700
herland Falls	Cent. Vt. R. R	433
anton	Port. & Ogden R. R	1t0
tsville	Woodstock R. R	657
gennes	Cent. Vt. R. R	201
lden	Port. & Ogden R. R	1,673
terbury	Cent. Vt. R. R	434
lls River	M. & W. R. R. R	443
st Concord	Port. & Ogden R. R	851
st Danville	Port. & Ogden R. R	1,558
st Hartford	Cent. Vt. R. R	431
stminster	Vt. Valley R. R	264
ite River Junction	Cent. Vt. R. R	369
ite Rocks	Geol. Survey of Vt	2,532
liston	Cent. Vt. R. R	312
ıdsor	Cent. Vt. R. R	331
ıooski	Cent. Vt. R. R	190
lcott	Port. & Ogden R. R	705
odstock Station	Woodstock R. R	697

VIRGINIA.

Station.	Authority.	Elevation.
		Feet.
Abingdon	N. & W. R. R	2,069
Afton	C. & O. R. R	1,407
Alexandria, O. & A. R. R. depot	City Engineer	33
Do W. & O. R. R. depot	City Engineer	17
Do W. A. & G. R. R. depot	City Engineer	35
Do A. & F. R. R. depot	City Engineer	32
Alleghany	N. & W. R. R	1,230
Do	C. & O. R. R	2,056
Allen Creek	R. & A. R. R	407
Amelia	R. & D. R. R	360
Amherst Court House	U. S. C. & G. S	827
Anderson's	C. & O. R. R	221
Arcadia	Shenandoah Valley R. R	796
Arlington	U. S. C. & G. S	207
Ashby	Shenandoah Valley R. R	600
Ashcake	C. & O. R. R	199
Ashland	R. F. & P. R. R	221
Atlee's	C. & O. R. R	201
Backbone	C. & O. R. R	1,692
Balcony Falls	R. & A. R. R	701
Baldwin	R. & A. R. R	970
Barksdale	P. A. L. R. R	357
Bealeton	W. C., Va. M. & G. S. R. R	290
Beaver Dam	C. & O. R. R	282
Bellew's	V. R. R	895
Bellfield	Peters R. R	107
Bell's Valley	C. & O. R. R	1,507
Bentonville	Shenandoah Valley R. R	732
Berryville	Shenandoah Valley R. R	571
Bethel	R. & A. R. R	548
Big Island	R. & A. R. R	596
Big Lick	N. & W. R. R	925
Big Spring	N. & W. R. R	1,262
Big Tunnel	N. & W. R. R	1,930
Blacks and Whites	N. & W. R. R	425
Blue Ridge	N. & W. R. R	1,298
Do depot	C. & O. R. R	1,354
Do (Keyes' Gap)	W. & O. R. R	960
Do Summit	C. & O. R. R	1,486
Do Tunnel	C. & O. R. R	1,432
Bluff Mountain	U. S. C. & G. S	3,522
Bolling Hall	J. R. & K. Canal	167
Bolling Island	J. R. & K. Canal	185
Bolling's Landing	J. R. & K. Canal	268
Bonsacks	N. & W. R. R	996
Boscobel	R. & A. R. R	143
Boston	P. A. L. R. R	325
Boswell	R. & A. R. R	213
Boulton	R., F. & P. R. R	199
Boyceville	Shenandoah Valley R. R	575
Brand	C. & O. R. R	1,330
Brandy	W. C., Va. M. & G. S. R. R	359
Bremo	J. R. & K. Canal	234
Do Bluff	R. & A. R. R	231
Bristoe	W. C., Va. M. & G. S. R. R	190
Broad Run	W. C., Va. M. & G. S. R. R	395
Broadway	V. R. R	1,038

Station.	Authority.	Elevation.
		Feet.
Brooke	R., F. & P. R. R	66
Brown's	R. & A. R. R	291
Buchanan	Shenandoah Valley R. R	837
Buckner	C. & O. R. R	328
Buckton	W. C., Va. M. & G. S. R. R	508
Buffalo Forge	Shenandoah Valley R. R	755
Do. Gap	C. & O. R. R	1,882
Do. Mountain	U. S. C. & G. S	3,971
Buford's	N. & W. R. R	1,014
Bull Mountain	U. S. C. & G. S	3,216
Bull Run Mountain	U. S. C. & G. S	1,375
Bumpass	C. & O. R. R	329
Burke's	W. C., Va. M. & G. S. R. R	258
Burkeville	R. & D. R. R	523
Cady	C. & O. R. R	106
Cahas Mountain	U. S. C. & G. S	3,571
Callaghan	C. & O. R. R	1,428
Campbell	C. & O. R. R	356
Cape Henry, Signal Station	U. S. Signal Office	16
Capon Road	V. R. R	701
Catlett's	W. C., Va. M. & G. S. R. R	250
Cedar Point	R. & A. R. R	159
Cedarsville	Shenandoah Valley R. R	569
Central Depot	N. & W. R. R	1,785
Charlottesville	C. & O. R. R	450
Chatham	W. C., Va. M. & G. S. R. R	624
Cherry Hill	B. & P. R. R	7
Chester	R. & P. R. R	143
Chickahominy Bridge	C. & O. R. R	94
Chincoteague, Signal Station	U. S. Signal Office	18
Christiansburg	N. & W. R. R	2,012
Chula	P. A. L. R. R	280
Church Road	N. & W. R. R	303
Churchwood	N. & W. R. R	1,766
Clark Mountain	U. S. C. & G. S	1,097
Clark's Gap	W. & O. R. R	578
Clay's	N. & W. R. R	863
Clifton	W. C., Va. M. & G. S R. R	170
Do. Forge	C. & O. R. R	1,052
Clover	P. A. L. R. R	491
Cloverdale	Shenandoah Valley R. R	1,125
Coalfield	P. A. L. R. R	323
Cobham	W. C., Va. M. & G. S. R. R	401
Cohoke	R., Y. R. & C. R. R	40
Coleman Falls	R. & A. R. R	578
Columbia	R. & A. R. R	206
Concord	N. & W. R. R	833
Contention	J. R. & K. Canal	143
Copeland	C. & O. R. R	1,246
Covington	C. & O. R. R	1,245
Cowan's	V. R. R	1,107
Cow Pasture Bridge	C. & O. R. R	1,135
Craigsville	C. & O. R. R	1,515
Crane	C. & O. R. R	1,366
Crimora	Shenandoah Valley R. R	1,242
Crozet	C. & O. R. R	718
Culpeper	W. C., Va. M. & G. S. R. R	403
Do. Baptist Church	U. S. C. & G. S	534
Do. Court-House	U. S. C. & G. S	512
Danville	W. C., Va. M. & G. S. R. R	413
Dawson	C. & O. R. R	324
Delaplane	W. C., Va. M. & G. S. R. R	455
Dispatch	R., Y. R. & C. R. R	67
Disputanta	N. & W. R. R	117

Station.	Authority.	Elevation.
		Feet.
Dover	R. & A. R. R	143
Drewry Bluff	R. & P. R. R	119
Drummond, Lake	Toner	21
Dry Fork	W. C., Va. M. & G. S. R. R	624
Dublin	N. & W. R. R	2,066
Do	C. & O. R. R	1,484
Eagle Rock	R. & & A. R. R	936
East Liberty	Shenandoah Valley R. R	946
Edinburgh	V. R. R	845
Elba	R., F. & P. R. R	185
Elizabeth Furnace	C. & O. R. R	1,812
Elk Creek Mills	J. R. & K. Canal	415
Elk Hill	R. & A. R. R	198
Elk Island	R. & A. R. R	198
Elkton	Shenandoah Valley R. R	958
Ellerslie	J. R. & K. Canal	143
Ellerson	C. & O. R. R	106
Elliot Knob	U. S. C. & G. S	4,473
Emory and Henry College	N. & W. R. R	2,096
Evington	W. C., Va. M. & G. S. R. R	724
Fairfax	W. C., Va. M. & G. S. R. R	382
Fairfield	Shenandoah Valley R. R	522
Fair Oaks	R., Y. R. & C. R. R	163
Falls Church	U. S. C. & G. S	364
Fall Creek	W. C., Va. M. & G. S. R. R	535
Farmville	N. & W. R. R	316
Farmwell	W. & O. R. R	320
Ferrol	C. & O. R. R	1,810
Fishersville	C. & O. R. R	1,320
Fish Haul	R., Y. R. & C. R. R	44
Ford's	N. & W. R. R	307
Forest	N. & W. R. R	877
Do	V. R. R	953
Fork Mountain	U. S. C. & G. S	3,851
Fort Defiance	V. R. R	1,247
Fort Runyan	B. & P. R. R	27
Four Mile Run	B. & P. R. R	50
Franconia	B. & P. R. R	23[illegible]
Fredericksburgh	R., F. & P. R. R	4[illegible]
Fredericks Hall	C. & O. R. R	[illegible]7
Front Royal	Shenandoah Valley R. R	495
Do	W. C., Va. M. & G. S. R. R	546
Gainesville	W. C., Va. M. & G. S. R. R	357
Gala Water	R. & A. R. R	93[illegible]
Gall's Quarry	J. R. & K. Canal	20[illegible]
Galt's Mills	J. R. & K. Canal	4[illegible]
Galtville	R. & A. R. R	4[illegible]
Garnett	C. R O. R. R	1[illegible]
Garysburgh	P. & R.	1[illegible]
Gish's	A., M. & O. R. R	9[illegible]
Glade Spring	A., M. & O. R. R	2,0[illegible]
Gladstone	R. & A. R. R	3[illegible]
Glen Allen	R. & A. R. R	85[illegible]
Glenlyn	N. & W. R. R	1,52[illegible]
Glenwood	R. & A. R. R	715
Do	Shenandoah Valley R. R	760
Gordonsville	C. & O. R. R	495
Goshen	C. & O. R. R	1,410
Do Bridge	C. & O. R. R	1,410
Greenbay	P., A. L. R. R	589
Green Springs	C. & O. R. R	529
Greenville	Shenandoah Valley R. R	1,550
Greenway	R. & A. R. R	383
Greenwood	C. & O. R. R	1,068

Station.	Authority.	Elevation.
		Feet.
Greenwood Tunnel	C. & O. R. R	1,072
Griffiths	C. & O. R. R	1,165
Grove Hill	Shenandoah Valley R. R	966
Guilford	W. & O. R. R	415
Gurney's	R., F. & P. R. R	121
Half Way	R. & P. R. R	114
Hamilton	W. & O. R. R	454
Hanover	C. & O. R. R	82
Do..Junction	C. & O. R. R	134
Happy Creek	W. C., Va. M. & G. S. R. R	790
Hardware	R. & A. R. R	266
Harrisonburgh	V. R. R	1,338
Haymarket	W. C., Va. M. & G. S. R. R	337
Herndon	W. & O. R	395
Hewletts	C. & O. R. R	278
Holcomb Rock	R. & A. R. R	562
Houston	Shenandoah Valley R. R	1,348
Howardsville	R. & A. R. R	315
Humpback Mountain	U. S. C. & G. S	3,645
Hungary	R., F. & P. R. R	214
Hunslet	C. & O. R. R	100
Hunters	W. & O. R. R	345
Indian Rock	R. & A. R. R	780
Irish Creek	Shenandoah Valley R. R	1,010
Irwin	R. & A. R. R	159
Ivor	N. & W. R. R	87
Ivy	C. & O. R. R	545
Jackson	R. & A. R. R	845
Jackson's River	C. & O. R. R	1,136
Jarman Mountain	U. S. C. & G. S	3,161
Jarratts	Peters. R. R	154
Jenning's Ordinary	P. A. L. R. R	498
Jetersville	P. A. L. R. R	446
Jordans	F., O. & C. R. R	455
Joshua Falls	R. & A. R. R	455
Kernstown	V. R. R	744
Keswick	W. C., Va. M. & G. S. R. R	436
Keysville	P. A. L. R. R	625
Kilby	R., F. & P. R	212
Kimball	Shenandoah Valley R. R	895
King	C. & O. R. R	1,511
Korah	R. & A. R. R	106
Lagrange	C. & O. R. R	1,618
Lawyer's Road	W. C., Va. M. & G. S. R. R	739
Leesburgh Signal	U. S. C. & G. S	683
Leesburgh	W. & O. R. R	321
Lexington	R. & A. R. R	958
Liberty	N. & W. R. R	959
Linden	W. C., Va. M. & G. S. R. R	916
Lindsay	W. C., Va. M. & G. S. R. R	477
Linville	V. R. R	1,242
Lithia	Shenandoah Valley R. R	968
Loch Laird	R. & A. R. R	784
Do	Shenandoah Valley R. R	800
Lockhart's Gap	W. & O. R. R	896
Lofton	Shenandoah Valley R. R	1,785
Long Branch	B. & P. R. R	82
Longdale	C. & O. R. R	1,166
Long Mountain	U. S. C. & G. S	1,436
Lorraine	R. & A. R. R	142
Louisa Court-House	C. & O. R. R	452
Lowmoor	C. & O. R. R	1,156
Lowry's	N. & W. R. R	791
Lucado	W. C., Va. M. & G. S. R. R	833

Station.	Authority.	Elevation.
		Feet.
Luray	Shenandoah Valley R. R	822
Lynchburgh	W. C., Va, M. & G. S. R. R	529
Do.....Court House	U. S. C. & G. S	796
Do.....Signal Station	U. S. Signal Office	652
Lynch's	W. C., Va. M. & G. S. R. R	730
Lyndhurst	Shenandoah Valley R. R	1,340
Madison	W. C., Va. M. & G. S. R. R	395
Maiden Adventure	R. & A. R. R	143
Manakin	R. & A. R. R	141
Manassas Junction	W. C., Va. M. & G. S. R. R	317
Manchester	P. A. L. R. R	38
Manchester Crossing	R. & P. R. R	102
Manor	Shenandoah Valley R. R	497
Manteo	R. & A. R. R	324
Marion	N. & W. R. R	2,136
Markham	W. C., Va. M. & G. S. R. R	552
Marksville	Shenandoah Valley R. R	1,066
Marlbrook	Shenandoah Valley R. R	1,165
Marshall Mountain	U. S. C. & G. S	3,374
Martin's	N. & W. R. R	1,919
Mason's	F., O. & C. R. R	485
Mason's Tunnel	C. & O. R. R	1,592
Do.....Depot	C. & O. R. R	1,551
Mattoaca	R. & A. R. R	375
Mattoax	P. A. L. R. R	223
Mawrertown	V. R. R	788
Max Meadows	N. & W. R. R	2,028
Meadow	R., Y. R. & C. R. R	89
Mechum's River	C. & O. R. R	550
Meherrin	P. A. L. R. R	589
Melton	C. & O. R. R	519
Michaux's Ferry	J. R. & K. Canal	143
Middleton Mills	R. & A. R. R	231
Do	J. R. & K. Canal	234
Middletown	V. R. R	660
Midland	W. C., Va. M. & G., S. R. R	321
Do..Junction	R. & A. R. R	504
Midway Mills	R. & A. R. R	340
Millboro'	C. & O. R. R	1,679
Do..Bridge	C. & O. R. R	1,642
Milford	R., F. & P. R. R	100
Miller	R. & A. R. R	725
Mitchell's	W. C., Va. M. & G. S. R. R	350
Mossing Ford	P. A. L. R. R	360
Mount Crawford	V. R. R	1,171
Mount Jackson	V. R. R	916
Mount Pleasant	B. & P. R. R	11
Mount Sidney	V. R. R	1,258
Munson's Hill	U. S. C. & G. S	383
Narrows	N. & W. R. R	1,546
Natural Bridge	R. & A. R. R	736
Neabsco	B. & P. R. R	30
New Canton	J. R. & K. Canal	223
New Market	R. & A. R. R	350
Do	V. R. R	971
New River Depot	N. & W. R. R	1,757
New's Ferry	P. A. L. R. R	340
Newtown	V. R. R	731
Noel's	C. & O. R. R	254
Nokesville	W. C., Va. M. & G. S. R. R	270
Norfolk, Signal Station	U. S. Signal Office	30
North Anna	C. & O. R. R	244
North Mountain	C. & O. R. R	2,064
North Mountain Summit	C. & O. R. R	2,074

Station.	Authority.	Elevation.
		Feet.
Nottaway	N. & W. R. R	421
Orange Court-House	W. C., Va. M. & G. S. R. R	506
Otter River	W. C., Va. M. & G. S. R. R	665
Overall	Shenandoah Valley R. R	662
Paddy, Cacapon Gap	W. & O. R. R	2,009
Pamplin's	N. & W. R. R	678
Panther Gap	C. & O. R. R	1,594
Patterson	Shenandoah Valley R. R	1,135
Payne	R. & A. R. R	266
Peake	C. & O. R. R	193
Peach Grove	U. S. C. & G. S	522
Peaked Mountain	U. S. C. & G. S	2,929
Peaks of Otter	Guyot	3,993
Do	U. S. C. & G. S	4,001
Do Flat Top	U. S. C. & G. S	3,875
Pemberton	R. & A. R. R	190
Pendleton	C. & O. R. R	472
Penola	R., F. & P. R. R	94
Peters	C. & O. R. R	1,175
Petersburgh, Depot of N. & W. & R. & P. R. R	City Engineer	9
Do Depot of P. R. R	City Engineer	70
Peters Mountain	U. S. C. & G. S	1,824
Plains	W. C., Va. M. & G, S. R. R	565
Pleasant Hill	Peters. R. R	119
Pleasant Valley	V. R. R	1,248
Pocahontas	R. & P. R. R	17
Do	N. & W. R. R	2,312
Pond Gap	C. & O. R. R	1,682
Port Republic	Shenandoah Valley R. R	1,096
Port Walthall	R. & P. R. R	87
Potomac Run	R., F. & P. R. R	85
Powhatan	P. A. L. R. R	320
Prospect	N. & W. R. R	575
Purcellville	W. & O. R. R	553
Quantico	B. & P. R. R	16
Ragged Mountain	U. S. C. & G. S	3,298
Rapid Anne	W. C., Va. M. & G. S. R. R	306
Rappahannock	W. C., Va. M. & G. S. R. R	275
Ream's	Peters R. R	162
Rectortown	W. C., Va. M. & G. S. R. R	444
Rein's Island, River Lock	J. R. & K. Canal	115
Reitsville	R. & D. R. R	831
Rice's	N. & W. R. R	396
Richland	R., F. & P. R. R	10
Richmond, depot of R., F. & P. R. R	City Engineer	181
Do R. & P. R. R	City Engineer	84
Do R. & A. R. R	City Engineer	83
Do R. & D. R. R	City Engineer	28
Do R., Y. R. & C. R. R	City Engineer	18
Do C. & O. R. R	City Engineer	28
Rileysville	Shenandoah Valley R. R	726
Ripplemead	N. & W. R. R	1,607
River	W. C., Va. M. & G. S. R. R	493
Riverside	Shenandoah Valley R. R	938
Riverton	Shenandoah Valley R. R	497
Riverville	R. & A. R. R	423
Roanoke	Shenandoah Valley R. R	907
Rock Castle	J. R. & K. Canal	177
Do	R. & A. R. R	175
Rolling Mills	R. & A. R. R	530
Romancoke	R., Y. R. & C. R. R	44
Rope Ferry	R. & A. R. R	668
Round Hill	W. & O. R. R	558

Station.	Authority.	Elevation.
		Feet.
Rural Retreat	A., M. & O. R. R	2,515
Rutherglen	R., F. & P. R. R	203
Sabbot Hill	J. R. & K. Canal	143
St. Asaph Junction	B. & P. R. R	45
Salem	W. C. Va. M. & G. S. R. R	633
Salisbury	R. & A. R. R	894
Saltpeter Cave	R. & A. R. R	892
Saltville	N. & W. R. R	1,724
Scottsburg	P. A. L. R. R	342
Scottsville	R. & A. R. R	275
Seven Mile Ford	N. & W. R. R	1,988
Shadwell	W. C., Va. M. & G. S. R. R	303
Shenandoah Iron Works	Shenandoah Valley R. R	940
Do R. (Snicker's)	W. & O. R. R	360
Sherando	Shenandoah Valley R. R	1,380
Smith Lock	R. & A. R. R	516
Smith Mountain	U. S. C. & G. S	2,043
Snickersville	W. & O. R. R	680
South Anna Depot	C. & O. R. R	70
South Branch Mountain	W. & O. R. R	2,148
South River	R. & A. R. R	850
Spear Mountain	U. S. C. & G. S	1,616
Spout Spring	N. & W. R. R	848
Springfield	W. C., Va. M. & G. S. R. R	240
Staples Mills	J. R. & K. Canal	455
Stapleton	R. & A. R. R	447
Staunton	C. & O. R. R	1,387
Do	V. R. R	1,379
Staytide	N. & W. R. R	1,640
Steel	C. & O. R. R	1,209
Stephenson's	V. R. R	499
Stony Creek	P. R. R	74
Strasburg	W. C., Va. M. & G. S. R. R	637
Do Junction	W. C., Va. M. & G. S. R. R	694
Stuart Draft	Shenandoah Valley R. R	1,388
Suffolk	N. & W. R. R	58
Sugarloaf Mountain	U. S. C. & G. S	2,292
Sweet Hall	R., Y. R. & C. R. R	40
Swoope	C. & O. R. R	1,650
Sycamore	W. C., Va. M. & G. S. R. R	733
Do	C. & O. R. R	160
Taylorsville	R., F. & P. R. R	119
Telegraph Road	B. & P. R. R	82
Temples	R. & P. R. R	88
Thaxtons	N. & W. R. R	962
Thompson	Shenandoah Valley R. R	790
Thoroughfare	W. C., Va. M. & G. S. R. R	399
Timberville	V. R. R	1,018
Tinker Creek	Shenandoah Valley R. R	961
Tobacco Row Mountain	U. S. C. & G. S	2,938
Tolersville	C. & O. R. R	463
Tomahawk	P. A. L. R. R	257
Tonis Brook	V. R. R	745
Trevilian	C. & O. R. R	523
Trice	C. & O. R. R	1,816
Troutdale	Shenandoah Valley R. R	1,400
Tuckahoe	J. R. & K. Canal	143
Tunstalls	R., Y. R. & C. R. R	60
Una	C. & O. R. R	1,420
Unionville	F., O. & C. R. R	500
Variety Springs	C. & O. R. R	1,905
Verdiersville	F., O. & C. R. R	514
Verdon	C. & O. R. R	220
Verona	V. R. R	1,272

Station.	Authority.	Elevation.
		Feet.
Vesuvius	Shenandoah Valley R. R	1,420
Vienna	W. & O. R.R	395
View Tree Mountain	U. S. C. & G. S	1,087
Vinita	R. & A. R. R	142
Virgin's Mills	J. R. & K. C. R. R	251
Wadesville	V. R. R	495
Wakefield	N. & W. R. R	100
Walker Ford	R. & A. R. R	431
Ward's Springs	W. C., Va. M. & G. S. R. R	797
Warminster	R. & A. R. R	332
Warren	R. & A. R. R	299
Warrenton Junction	W. C., Va. M. & G. S. R. R	265
Water Lick	W. C., Va. M. & G. S. R. R	550
Waterloo	B. & P. R. R	50
Waverly	N. & W. R. R	114
Waynesborough	C. & O. R. R	1,302
Do	Shenandoah Valley R. R	1,298
Weldon	Peters. R. R	105
Wellville	N. & W. R. R	420
Wenonah	N. & W. R. R	1,559
Westham	R. & A. R. R	116
West Point	R., Y. R. & C. R. R	9
Westview	R. & A. R. R	183
Weyers Cave	Shenandoah Valley R. R	1,123
White House	R., Y. R. & C. R. R	18
White Post	Shenandoah Valley R. R	610
White Top	Guyot	5,530
Whittle's	W. C., Va. M. & G. S. R. R	812
Wickham	C. & O. R. R	75
Williamsons	C. & O. R. R	1,053
Willis Mountain	U. S. C. & G. S	1,159
Wilson's	N. & W. R. R	367
Wilton	R. & A. R. R	996
Winchester	V. R. R	717
Windsor	N. & W. R. R	84
Wingina	R. & A. R. R	350
Woel	C. & O. R. R	257
Wolf Trap	P. A. C. R.R	349
Wood Bridge	B. & P. R. R	73
Woodford	R., F. & P. R. R	125
Woodstock	V. R. R	820
Wytheville	N. & W. R. R	2,242
Zuni	N. & W. R. R	28

WASHINGTON TERRITORY.

Station.	Authority.	Elevation.
		Feet.
Aiks, Mount	N. Trans. Survey	7,623
Ainsworth	N. P. R. R	351
Baker, Mount	U. S. C. & G. S	10,827
Do	Petermann	11,100
Bellingham, Fort	Med. Dept. U. S. A	86
Cady's Pass	N. P. R. R. Surveys	6,147
Calispell Peak	N. Trans. Survey	6,905
Calispelur Lake	N. Trans. Survey	2,110
Cantonment Stevens	P. R. R. Reports	3,412
Carlton, Mount	N. Trans. Survey	6,080
Castle Rock	N. P. R. R	83
Centreville	N. P. R. R	207
Chehalis	N. P. R. R	204
Chewelah Peak	N. Trans. Survey	5,748
Colfax	Oreg. R. R	1,941
Colville	N. Trans. Survey	1,917
Do. Fort	P. R. R. Reports	1,215
Do ..do	Smithsonian Inst	1,963
Do. Mount	N. Trans. Survey	5,667
Constance, Mount	Petermann	7,777
Cowlitz Pass	N. P. R. R. Surveys	4,210
Dayton	Oreg. R. R	1,360
Ellensburg	N. P. R. R	1,510
Elorka Peak	N. Trans. Survey	1,831
Eltopia	N. P. R. R	600
George, Fort		100
Grange City	Oreg. R. R	502
Great Plain of the Columbia		1,000 3,000
Harriston	N. P. R. R	1,950
Hood, Mount	Williamson	11,225
Horseshoe Bend	N. P. R. R	494
Ike's Mountain	Pacific R. R. Reports	5,100
In-chats-chan		2,750
Jefferson, Mount	Humboldt	15,500
Juniper	N. P. R. R	318
Kachiss, Lake	Pacific R. R. Reports	2,158
Kalama	N. P. R. R	33
Do	Toner	45
Kechelus, Lake		2,388
Kuthas, Lake		1,953
Lake View	N. P. R. R	324
Lind	N. P. R. R	1,363
Marshall	N. P. R. R	2,134
Meadow Pass	N. Trans. Survey	3,248
Metre Rock	N. Trans. Survey	2,034
Moscow	Oreg. R. R.	2,536
Natchess Pass	N. Trans. Servey	4,900
Do	N. Trans. Survey	4,900
New Tacoma	N. P. R. R	31
Okinokane, Fort		779
Do .... Lake	Pacific R. R. Reports	1,163
Olympia, Signal Station	U. S. Signal Office	36
Olympus, Mount	Wilkes	8,138
Palouse Junction	N. P. R. R	858
Puyallup	N. P. R. R	67
Picket, Camp	Toner	150
Plait-il, Lake		1,811

Station.	Authority.	Elevation.
		Feet.
Pluvin's Point	N. P. R. R	950
Pomeros Prairie	N. P. R. R	1,806
Ranier, Mount (Tachoma)	U. S. C. & G. S	14,444
Ritzville	N. P. R. R	1,825
Ratcheen Lake	N. Trans. Survey	2,214
Saint Helena, Mount	Petermann	9,750
Sheets Pass	N. Trans. Survey	3,606
Simquet	Pacific R. R. Reports	3,327
Sister Lake	N. Trans. Survey	2,449
Skalahum, Mount	Petermann	7,400
Skomegan, Mount	Petermann	8,400
Snake River	N. P. R. R	328
Snoqualmie Pass	Pacific R. R. Reports	3,468
Do	N. Trans. Survey	3,110
Spokane Falls	N. P. R. R	1,910
Spokane House	Pacific R. R. Reports	1,200
Sprague	N. P. R. R	1,908
Stampede Pass, summit 9,100 foot tunnel	N. P. R. R	2,885
Do summit of Cascade Range	N. P. R. R	3,980
Steilacoom		1,300
Do Fort	Med. Dept. U. S. A	300
Stenger's Pass	N. Trans. Survey	3,105
Stenger's Peak	N. Trans Survey	6,299
Stevens	N. P. R. R	2,282
Do. Mount	Mullan	6,900
Striped Peak	Mullan	6,000
Stuck Junction	N. P. R. R	110
Suogualuul Pass	N. Trans. Survey	3,110
Tacoma Pass	N. Trans. Survey	3,430
Taylor, Fort	Toner	135
Tchopahk, Mount	Petermann	7,200
Tenino	N. P. R. R	315
Texas Ferry	Oreg. R. R	519
Townsend, Fort	Toner	135
Trent	N. P. R. R	1,989
Upper Cañon	N. P. R. R	1,750
Vancouver, Fort	Med. Dept. U. S. A	50
Wait's Lake	N. Trans. Survey	1,816
Walla Walla	Oreg. R. R	908
Do	Wheeler	1,034
Walla Walla, Fort		1,396
Walla Walla Mission		2,100
Wallula	Oreg. R. R	308
Wallula Junction	N. P. R. R	326
Willailootzas Lake	Toner	2,940
Winlock	N. P. R. R	325
Yakima City	N. P. R. R	990
Yakima Pass	Pacific R. R. Reports	3,468
Do	N. Trans. Survey	3,625
Yelm Prairie	N. P. R. R	387

Station.	Authority.	Elevation
		Feet.
Alden	C. & O. R. R	6[illegible]5
Alderson	C. & O. R. R	1,5[illegible]8
Barboursville	C. & O. R. R	5[illegible]8
Barksdale	C. & O. R. R	1,3[illegible]8
Bayard (Blackwater head)	W. Va., C. & P. R. R	3,1[illegible]0
Blacksburg	C. & O. R. R	6[illegible]0
Blackwater, Beaver Fork	W. Va., C. & P. R. R	3,0[illegible]0
Blaine	W. Va., C. & P. R. R	1,689
Bluefield	N. & W. R. R	2,552
Blue Sulphur Springs	C. & O. R. R	598
Broad Tree Tunnel	B. & O. R. R	1,104
Brownstown	C. & O. R. R	608
Buffalo	C. & O. R. R	1,109
Caldwell	C. & O. R. R	1,766
Cameron	B. & O. R. R	1,049
Do	Valley R. R	547
Cannelton	C. & O. R. R	638
Caperton	C. & O. R. R	984
Carbon	B. & O. R. R	667
Ceredo	C. & O. R. R	545
Charleston	C. & O. R. R	603
Charlestown	Shenandoah Valley R. R	517
Cherry Run	B. & O. R. R	398
Coalburgh	C. & O. R. R	625
Cotton Hill	C. & O. R. R	792
Cranberry Summit	B. & O. R. R	2,551
Crescent	C. & O. R. R	638
De Chantel, Mount	B. & O. R. R	672
Dimmock	C. & O. R. R	1,045
Dol Gully Tunnel	B. & O. R. R	545
Dow	C. & O. R. R	1,432
Edgington	P., C. & St. L. R. R	704
Elk-Garden Mine	W. Va., C. & P. R. R	2,300
Elm Grove	B. & O. R. R	681
Elms	C. & O. R. R	860
Fairfax Stone	W. Va., C. & P. R. R	3,100
Fairmont	B. & O. R. R	888
Falls Mills	N. & W. R. R	2,325
Fayette	C. & O. R. R	900
Fern Spring	C. & O. R. R	914
Fort Spring	C. & O. R. R	1,626
Frederick	C. & O. R. R	640
Fridelphia	B. & O. R. R	735
Gauley	C. & O. R. R	707
Glovers Gap	B. & O. R. R	1,150
Grafton, B. M. on top N. side of central pier B. & O. R. R. bridge over Taggarts Valley Cr	U. S. C. & G. S	997
Grafton	B. & O. R. R	985
Graham	N. & W. R. R	2,387
Greenbrier Stock Yards	C. & O. R. R	1,530
Guyandotte	C. & O. R. R	560
Halltown	Valley R. R	339
Hampton	C. & O. R. R	540
Harper's Ferry	B. & O. R. R	272
Do (bridge)	Valley R. R	277
Hawks Nest	C. & O. R. R	827
Hinton	C. & O. R. R	137

Station.	Authority.	Elevation.
		Feet.
Holliday Cove	P., C. & St. L. R. R	721
Huntington	C. & O. R. R	566
Hurricane	C. & O. R. R	6,837
Ingleside	N. & W. R. R	1,937
Junction Switch	C. & O. R. R	560
Kanawha Falls	C. & O. R. R	669
Kearneysville	B. & O. R. R	589
Lewiston	C. & O. R. R	616
Loup Creek	C. & O. R. R	647
Lowell's	C. & O. R. R	1,512
Lowmoor Junction	C. & O. R. R	1,155
Lytleton	B. & O. R. R	930
McKendree	C. & O. R. R	1,141
Malden	C. & O. R. R	606
Mannington	B. & O. R. R	967
Martinsburgh	B. & O. R. R	435
Masons Mills	C. & O. R. R	1,527
Meadow Creek	C. & O. R. R	1,265
Milton	C. & O. R. R	586
Mohler Mills	C. & O. R. R	1,540
Moorefield	W. & O. R. R	806
Morgantown, Signal Station	U. S. Signal Office	963
Moundsville	B. & O. R. R	640
Mount Carbon	C. & O. R. R	639
Newburgh	B. & O. R. R	1,215
New Richmond	C. & O. R. R	1,289
New River Falls	C. & O. R. R	1,290
Do....Bridge	C. & O. R. R	827
North Branch	B. & O. R. R	605
North Mountain	B. & O. R. R	547
Nuttallburgh	C. & O. R. R	946
Ona	C. & O. R. R	622
Paint Creek	C. & O. R. R	622
Parkersburgh, L. W. Ohio R	M. & C. R. R	574
Do .....H. W. Ohio R	M. & C. R. R	624
Do .....Bridge	M. & C. R. R	664
Do .....B. M. on S. front of water table of P. O. & C H	U. S. C. & G. S	616
Pawpaw	C. & O. R. R	1,237
Piedmont	B. & O. R. R	925
Point Mills	B. & O. R. R	896
Prince	C. & O. R. R	1,192
Quinnimont	C. & O. R. R	11,965
Ripon	Shenandoah Valley R. R	519
River View	C. & O. R. R	1,072
Ronceverte	C. & O R. R	1,663
Roney's Point	B. & O. R. R	829
Rowlesburg, B. M. on base of center pillar W. end B. & O. R. R. bridge over Cheat River	U. S. C. & G. S	1,402
Saint Albans	C. & O. R. R	592
Salton	C. & O. R. R	608
Scary	C. & O. R. R	591
Scott	C. & O. R. R	683
Sewall	C. & O. R. R	1,003
Shaw	W. Va., C. & P. R. R	1,290
Shenandoah Junction	Shenandoah Valley R. R	515
Shepherdstown	Shenandoah Valley R. R	405
Siding	C. & O. R. R	1,150
Spring Hill	C. & O. R. R	597
Steeles	C. & O. R. R	1,210
Stone Cliff	C. & O. R. R	1,076
Summit Point	Valley R. R	623
Talcott	C. & O. R. R	1,512

Station.	Authority.	Elevation.
		Feet.
Thorndyke	C. & O. R. R.	640
Thornton	B. & O. R. R.	1,038
Tuckahoe	C. & O. R. R.	2,035
Tunnelton	B. & O. R. R.	1,820
Welling Tunnel	B. & O. R. R.	1,193
Wheeling	B. & O. R. R.	637
Do...North and Water streets	B. & O. R. R.	645
Do...Market Place	B. & O. R. R.	662
White Sulphur Springs	C. & O. R. R.	1,922
Winifrede Junction	C. & O. R. R.	616

WISCONSIN.

Station.	Authority.	Elevation.
		Feet.
Abbotsford	Wis. Cent. R. R	1,425
Ableman's	C. & N. W. R. R	878
Amherst	Wis. Cent. R. R	1,089
Do..Junction		1,171
Do..crossing W. C. R. R	G. B. & Minn. R. R	1,130
Angelica	Mil. & N. R. R	867
Aniwa	M., L. S. & W. R. R	1,418
Appleton	M., L. S. & W. R. R	715
Do..Fox River		718
Do..Junction	M., L. S. & W. R. R	801
Ashland	Wis. Cent. R. R	678
Auburndale	Wis. Cent. R. R	1,217
Augusta	C. & N. W. R. R	965
Baldwin	C. & N. W. R. R	1,132
Baraboo	C. & N. W. R. R	861
Barton	N. W. U. R. R	910
Bear Creek	M., L. S. & W. R. R	817
Beaver	Wis. Val. R. R	963
Belgium	M., L. S. & W. R. R	765
Beloit, crossing C. & N. W. & W. N. R. R	C. & N. W. R. R	740
Do, B. M. on foundation stone of water tank	C. & N. W. R. R	741
Do, level of water in Rock River	C. & N. W. R. R	729
Birnamwood	M., L. S. & W. R. R	1,293
Black River Station	C. & N. W. R. R	802
Blooms	C. & N. W. R. R	881
Boyer's Bluff, Geodetic Station	U. S. Lake Survey	712
Branch	M., L. S. & W. R. R	729
Bruce, Geodetic Station	U. S. Lake Survey	767
Buckbee	M., L. S. & W. R. R	831
Buena Vista	Wis. Cent. R. R	1,074
Butte De Morts Lake, surface	Mil. & N. R. R	735
Caledonia, Geodetic Station	U. S. Lake Survey	791
Camp Douglas Junction, crossing C. & N. W. & M. & St. P. R. R	C. & N. W. R. R	929
Cato	M., L. S. & W. R. R	844
Cedarburgh	Mil. & N. R	773
Cedar Grove	M., L. S. & W.R. R	697
Centralia	Wis. Val. R. R	1,015
Centreville	M., L. S. & W. R. R	637
Chilton	Mil. & N. R. R	851
Clayton	M., L. S. & W. R. R	1,347
Clintonville	M., L. S. & W. R. R	824
Colby	Wis. Cent. R. R	1,315
Coloma	Wis. Cent. R. R	1,042
Dane	C. & N. W. R. R	1,058
Davidson's Farm	Mil. & N. R. R	747
Day's Mill	Mil. & N. R. R	720
Deckers	M., L. S. & W. R. R	756
Delafield, Geodetic Station	U. S. Lake Survey	1,242
De Pere	Mil. & N. R. R	591
Dexterville	G. B. & Minn. R. R	1,001
Dillman's	M., L. S. & W. R. R	668
Dorchester	Wis. Cent. R. R	1,466
Dover, Geodetic Station	U. S. Lake Survey	861
Dresbach, low water	U. S. Engr. Corps	623
Dundas	M., L. S. & W. R. R	832
Eau Claire	C. & N. W. R. R	836

Station.	Authority.	Elevation.
		Feet.
Eden	N. W. U. R. R	1,019
Eland Junction	M., L. S. & W. R. R	1,244
Elkhart Lake	Mil. & N. R. R	944
Elk Mound	C. & N. W. R. R	926
Elroy	C. & N. W. R. R	955
Erin, Geodetic Station	U. S. Lake Survey	1,358
Evansville, B. M. on foundation stone of water tank	C. & N. R. R	893
Fairchild	C. & N. R. R	1,066
Fall Creek Station	C. & N. W. R. R	929
Fifield	Wis. Cent. R. R	1,458
Fond du Lac	N. W. U. R. R	769
Footville, B. M. on foundation stone of water tank	C. & N. W. R. R	816
Forest Junction	M., L. S. & W. R.R	830
Fort Howard	Mil. & N. R. R	588
Fountain City, low water	U. S. Engr. Corps	637
Fredonia	Mil. & N. R. R	788
Goodhope	Mil. & N. R. R	694
Grafton	Mil. & N. R. R	752
Grand Rapids	G. B. & Minn. R. R	1,024
Granville	N. W. U. R. R	738
Green Bay	Mil. & N. R. R	588
Do....surface of Fox River	Mil. & N. R. R	582
Greenville	M., L. S. & W. R. R	812
Grimins	M., L. S. & W. R. R	845
Hammond	C. & N. W. R. R	1,100
Hancock	Wis. Cent. R. R	1,102
Hanover, cross. C. & N. W. R. R. & Monroe Br. of M. & St. P. R. R	C. & N. W. R. R	780
Hartland	Mil. & N. R. R	839
Hayton	Mil. & N. R. R	822
Herr Cassel	N. W. U. R. R	1,049
Hersey	C. & N. W. R. R	1,168
Horicon, Geodetic Station	U. S. Lake Survey	1,118
Horicon Lake	Toner	868
Hortonville	M., L. S. & W. R. R	808
Do....Junction	M., L. S. & W. R. R	789
Hudson	C. & N. W. R. R	700
Humbird	C. & N. W. R. R	1,018
Hunting	M., L. S. & W. R. R	940
Jackson	N. W. U. R. R	897
Junction City	Wis. Cent. R. R	1,145
Kaukauna	M., L. S. & W. R. R	655
Kelleys	M., L. S. W. R. R	1,246
Kewaskum	N. W. U. R. R	959
Kiel	Mil. & N. R. R	915
Knapp	C. & N. W. R. R	919
Knowlton	Wis. Val. R. R	1,131
La Crosse, L. W	U. S. Engr. Corps	626
Do...C. M. & St. P. R. R. depot	City Engineer	698
Do...Signal Station	U. S. Signal Office	708
Lake Shore Junction	M., L. S. & W. R. R	642
Lavalle	C. & N. W. R. R	897
Lebanon, Geodetic Station	U. S. Lake Survey	1,019
Lindivern	N. W. U. R. R	638
Lisbon, Geodetic Station	U. S. Lake Survey	1,054
Little Chute	M., L. S. & W. R. R	707
Lodi	C. & N. W. R. R	848
Lowries	C. & N. W. R. R	959
Madison, cross. C. & N. W. & P. du C. R. R.	C. & N. W. R. R	848
Do..Signal Station	U. S. Signal Office	949
Manitowoc	M., L. S. & W. R. R	593
Do....A. & N. L. R. R	Mil. & N. R. R	832

Station.	Authority.	Elevation.
		Feet.
Mannville	Wis. Cent. R. R	1,292
Marion	M., L. S. & W. R. R	860
Marshfield	Wis. Cent. R. R	1,289
Marshland, crossing of G. B. & M. R. R	C. & N. W. R. R	659
Medford	Wis. Cent. R. R	1,413
Medina	M., L. S. & W. R. R	813
Menasha	Wis. Cent. R. R	756
Do..Junction	Mil. & N. R. R	832
Menomonee	C. & N. W. R. R	878
Merrilon	C. & N. W. R. R	934
Merrimac	C. & N. W. R. R	796
Michigan, Lake	Mil. & N. R. R	582
Mignon	M., L. S. & W. R. R	673
Milladore	Wis. Cent. R. R	1,197
Millston	C. & N. W. R. R	915
Milwaukee, depot L. S. & M. S. R. R	City Engineer	592
Do ....Union Depot	City Engineer	584
Do ....Signal Station	U. S. Signal Office	697
Do ....Court-House, Geodetic Station	U. S. Lake Survey	838
Minerva	G. B. & Minn. R. R	832
Minnesota Junction, Geodetic Station	U. S. Lake Survey	998
Monroe's Farm	Mil. & N. R. R	669
Mosel	M., L. S. & W. R. R	639
Nagowicka	Toner	882
Nemahbin, Lake	Toner	867
New Berlin, Geodetic Station	U. S. Lake Survey	1,073
New Holstein	Mil. & N. R. R	933
New London	M., L. S. & W. R. R	756
Newton	M., L. S. & W. R. R	657
Norris	M., L. S. & W. R. R	1,298
Northport	G. B. & Minn. R. R	777
Norwalk	C. & N. W. R. R	1,020
Oakfield, Geodetic Station	U. S. Lake Survey	1,168
Oconomowoc, Lake	Toner	860
Ogdensburgh	G. B. & M. R. R	865
Ogenia	Wis. Cent. R. R	1,565
Oregon Station, B. M. on S. W. cor. of abutment of bridge over highway, S. of	C. & N. W. R. R	952
Oshkosh	M., L. S. & W. R. R	753
Otsburg	M., L. S. & W. R. R	698
Packwaukee	Wis. Cent. R. R	784
Penokee	Wis. Cent. R. R	1,285
Pewaukee, Lake	Toner	1,891
Phillips	Wis. Cent. R. R	1,454
Plainfield	Wis. Cent. R. R	1,113
Plover	Wis. Cent. R. R	1,078
Plymouth	Mil. & N. R. R	844
Portage	Wis. Cent. R. R	792
Port Edwards	Wis. Val. R. R	972
Port Washington	M., L. S. & W. R. R	669
Prattville	M., L. S. & W. R. R	777
Prescott, low water	U. S. Eng'r. Corps	664
Random Lake	Mil. & N. R. R	877
Reedsburg	C. & N. W. R. R	877
Roberts	C. & N. W. R. R	1,036
Rockfield	N. W. U. R. R	890
Rockland	Mil. & N. R. R	643
Royalton	G., B. & Minn. R. R	822
Ruddo	C. & N. W. R. R	974
Rudolph	Wis. Val. R. R	1,146
Rudville	M., L. S. & W. R. R	822
Rusk	C. & N. W. R. R	901
Saint Catherine	N. W. U. R. R	765
Saukville	Mil. & N. R. R	763

Station.	Authority.	Elevation.
		Feet.
Scandinavia	G., B. & Minn. R. R	935
Schwartzburgh, junct. M. & St. P. R. R	Mil. & N. R. R	648
Scranton	G., B. & Minn. R. R	962
Shawano	Mil. & N. R. R	819
Shawano Lake	Mil. & N. R. R	803
Sheboygan	M., L. S. & W. R. R	588
Sheridan	Wis. Cent. R. R	1,017
Sherwood	Mil. & N. R. R	835
Silver Springs	N. W. U. R. R	649
Somers, Geodetic Station	U. S. Lake Survey	764
Sparta	C. & N. W. R. R	786
Spencer	Wis. Cent. R. R	1,307
Split Rock	M., L. S. & W. R. R	971
Springvale, Geodetic Station	U. S. Lake Survey	1,044
Stetsonville	Wis. Cent. R. R	1,462
Steven's Point	Wis. Cent. R. R	1,090
Sugar Bush	M., L. S. & W. R. R	827
Tigerton	M., L. S. & W.R. R	1,032
Tomah	Wis. Val. R. R	967
Trempealeau, low water	U. S. Eng'r. Corps	630
Tunnel	C. & N. W. R. R	1,071
Two Rivers	M., L. S. & W. R. R	586
Ulao	M., L. S. & W. R. R	697
Unity	Wis. Cent. R. R	1,333
Upper Saint Croix Lake	Petermann	956
Valley Junction	Wis. Val. R. R	934
Waldo	Mil. & N. R. R	836
Wampum, Geodetic Station	U. S. Lake Survey	940
Warren's	C. & N. W. R. R	1,019
Waterford, Geodetic Station	U. S. Lake Survey	949
Wauhechem, Summit	Mil. & N. R. R	884
Waunakee	C. & N. W. R. R	922
Waupaca	Wis. Cent. R. R	899
Wausau	M., L. S. & W. R. R	1,182
Do	Wis. Val. R. R	1,227
Weeden's	M., L. S. & W. R. R	700
West Bend	N. W. U. R. R	906
Westborough	Wis. Cent. R. R	1,489
West Eau Claire	C. & N. W. R. R	877
Westfield	Wis. Cent. R. R	860
West Greenville	M., L. S. & W. R. R	892
Weston	M., L. S. & W. R. R	1,231
Weyauwega	Wis. Cent. R. R	823
Whitcomb	M., L. S. & W. R. R	1,130
Whitefish Bay	M., L. S. & W. R. R	654
Whittenberg	M., L. S. & W. R. R	1,177
Whittlesey	Wis. Cent. R. R	1,530
Wilson	C. & N. W. R. R	1,147
Wilton	C. & N. W. R. R	986
Winnebago, Lake	Mil. & N. R. R	744
Winona Junction, M. & St. P. R. R. cross	C. & N. W. R. R	655
Wisconsin Central Junction	M., L. S. & W. R. R	755
Wisconsin Valley Junction	C. & N. W. R. R	925
Woodland, Geodetic Station	U. S. Lake Survey	1,189
Worcester	Wis. Cent. R. R	1,605
Wright's	C. & N. W. R. R	900

WYOMING.

Station.	Authority.	Elevation.
		Feet.
Amethyst Mountain, Yellowstone National Park	Hayden	9,423
Arrow Peak	King	8,683
Aspen	U. P. R. R	7,405
Atlantic City	Hayden	7,850
Atlantic Peak	Hayden	12,794
Aurora	U. P. R. R	6,719
Baird, Mount	Hayden	9,990
Bald Mountain	Jones	9,897
Do.....Wind River Range, timber-line on		10,760
Baronette's Bridge, Yellowstone National Park	Hayden	5,978
Baronette's Peak, Yellowstone National Park	Hayden	10,459
Barrel Spring	Toner	6,854
Bastion Mountain	King	6,991
Battle Mountain	King	8,991
Baxter	Toner	6,300
Beaver Lake, Yellowstone National Park	Hayden	7,415
Bellevue Peak	King	9,820
Beulah Lake, Yellowstone National Park	Hayden	7,530
Big Horn Mountains	Raynolds	8,000 to 12,000
Big Pond Stage Station	Toner	6,541
Bison Peak, Yellowstone National Park	Hayden	9,038
Bitter Creek	U. P. R. R	6,705
Black Butte	Hayden	8,170
Do	King	8,176
Boleter	Toner	4,325
Bradley's Peak	Hayden	9,500
Bridger	U. P. R. R	6,637
Bridger, Fort		6,753
Do	Med. Dept., U. S. A	6,656
Bridger's Pass	U. P. R. R. Surveys	11,410
Brown, Camp	Jones	5,498
Do..... (old)	Jones	5,447
Brown's Park	Powell	5,409
Bryan	U. P. R. R	6,196
Buford	U. P. R. R	7,785
Bunsen Peak, Yellowstone National Park	Hayden	8,775
Carbon	U. P. R. R	6,830
Castletown	Pre. R. R. Levels	4,999
Central Peak	King	8,774
Chauvenet, Mount	Hayden	13,000
Cheyenne	U. P. R. R	6,059
Do..Signal Office	U. S. Signal Office	6,089
Cheyenne Pass	King	8,791
Do	U. P. R. R. Surveys	8,650
Chimney Peak	King	8,168
Chimney Rock	Jones	11,853
Chittenden, Mount, Yellowstone National Park	Hayden	10,190
Do	Jones	10,027
Church Buttes	U. P. R. R	6,368
Coffin Mountain	Hayden	11,376
Colorado Junction	U. P. R. R	6,314
Cooper's Lake	U. P. R. R	7,078

Station.	Authority.	Elevation.
		Feet.
Crater Hills, Yellowstone National Park	Hayden	7,820
Creston	U. P. R. R	7,048
Deer Creek Agency	Smithsonian Inst	5,000
Deer Mountain	King	8,377
Delham Peak	King	11,524
Devil's Gate	Petermann	6,028
Doane, Mount, Yellowstone National Park	Hayden	10,713
Dunraven Peak, Yellowstone National Park	Hayden	9,988
Edson	U. P. R. R	6,772
Elephant's Back, Yellowstone National Park	Hayden	8,884
Elk Mountain	King	11,511
Encampment Meadows	King	8,171
Essex Mountain	Hayden	8,750
Evans Pass	U. P. R. R. Surveys	8,424
Evanston	Hayden	6,835
Do	U. P. R. R	6,768
Evarts, Mount, Yellowstone National Park	Hayden	7,600
Fetterman, Fort	Petermann	4,973
Do	Toner	5,012
Flaming Gorge	Powell	5,925
Flat Mountain, Yellowstone National Park	Hayden	9,200
Fremont's Peak	Fremont	13,570
Do	Hayden	13,790
Gardner's River Springs, Yellowstone National Park	Hayden	6,100 to 6,500
Garnet Hill, Yellowstone National Park	Hayden	7,177
Genie, Mount	Hayden	12,546
Geyser Basin, Lower, Yellowstone National Park	Hayden	7,250
Geyser Basin, Upper, Yellowstone National Park	Hayden	7,400
Gibbon Geyser Basin, Yellowstone National Park	Hayden	7,527
Gibbon Lake, Yellowstone National Park	Hayden	7,838
Gilbert's Trading Post	Smithsonian Inst	7,400
Grand Encampment Mountain	King	11,003
Grand Téton	Hayden	13,691
Granger	U. P. R. R	6,289
Granite Cañon	U. P. R. R	7,319
Green River	U. P. R. R	6,088
Do.....Astronomical Station	Wheeler	6,097
Grizzly Mountain, Yellowstone National Park	Hayden	9,982
Gros Ventre Peak	Hayden	11,570
Halleck, Fort	Toner	7,800
Hallville	Toner	6,590
Hampton	Toner	6,500
Hancock, Mount	Hayden	10,235
Hayden, Mount (Grand Tèton)	Hayden	13,691
Do ..... timber line on	Hayden	11,000
Haystack Mountain, Yellowstone National Park	King	7,689
Heart Lake, Yellowstone National Park	Hayden	7,475
Hell Roaring Mountain, Yellowstone National Park	Hayden	8,418
Herring Lake, Yellowstone National Park	Hayden	7,530
Hill City	Pre. R. R. Levels	3,634
Hilliard	U. P. R. R	7,236
Hoback Peak	Hayden	10,818
Holmes, Mount, Yellowstone National Park	Hayden	10,528
Hooker, Mount	Hayden	12,900
Howell	Toner	7,090
Independence Rock	Petermann	6,187
Index Peak	Hayden	11,702

Station.	Authority.	Elevation.
		Feet.
Inyan Kara	Jenney	6,700
Do	Petermann	6,600
Iron Mountain	King	6,908
Jackson's Hole	Raynolds	6,000
Langford, Mount, Yellowstone National Park	Hayden	10,779
Laramie	U. P. R. R	7 158
Do	Wheeler	7,123
Do. Fort	Med. Dept., U. S. A	4,519
Do..do	Petermann	4,470
Do..do .Flag staff	Pre. R. R. Levels	4,274
Laramie Peak	L. O. Report, 1872	11,000
Do	Petermann	10,000
Laramie Plains	(mean)	7,000
Laramie Range	L. O. Report, 1872	7,000 to 9,000
Latham	Toner	6,900
Lawrence	Toner	6,200
Leidy, Mount	Hayden	11,177
Lewis, Lake, Yellowstone National Park	Hayden	7,800
Lookout	U. P. R. R	7,177
McDougal's Gap	Hayden	8,343
McDougal's Pass	Hayden	9,300
Madison Lake, Yellowstone National Park	Hayden	8,300
Mammoth Hot Springs, at Cabins, Yellowstone National Park	Hayden	6,387
Marston	Toner	6,245
Mary's Lake, Yellowstone National Park	Hayden	8,336
Medicine Bow	U. P. R. R	6,571
Medicine Bow Mountains	L. O. Report, 1872	8,000 12,000
Medicine Butte (Pill Hill)	Hayden	8,769
Medicine Peak	King	12,231
Miller		5,908
Millis	Toner	6,790
Mill Peak	King	10,506
Miner's Delight	Hayden	8,419
Moran, Mount	Hayden	12,800
Mountain City	Pre. R. R. Levels	3,589
Muddy Mountains	King	8,012
Mud Geysers on Yellowstone River, Yellowstone National Park	Hayden	7,725
Do.	Ludlow	7,626
Norris, Mount, Yellowstone National Park	Hayden	10,019
North Twin Butte, Lower Basin, Yellowstone National Park	Hayden	7,976
Owl Creek Pass	Jones	7,836
Pacific Springs	Toner	7,144
Pelican Hill, Yellowstone National Park	Hayden	9,580
Percy	U. P. R. R	6,971
Peshen's Store	King	6,500
Phil. Kearney, Fort	Med. Dept., U. S. A	6,000
Phlox Mountain	Jones	9,136
Piedmont	U. P. R. R	7,052
Pierre's Hole	Raynolds	6,400
Pilot Butte	Hayden	7,900
Pine Bluffs	King	8,878
Do	U. P. R. R	5,047
Piney, Fort	Lander	7,580
Point of Rocks	Lander	6,517
Promontory Top, Yellowstone National Park	Hayden	8,706
Quaorant Mountain, Yellowstone National Park	Hayden	10,127
Quaking Aspen Mountain	King	8,688

Station.	Authority.	Elevation.
		Feet.
Quien Hornet Mountain	King	9,300
Raw Hide Peak	Petermann	6,370
Rawlins	U. P. R. R.	6,753
Red Buttes	U. P. R. R.	7,309
Red Desert	U. P. R. R.	6,722
Red Mountain, Yellowstone National Park	Hayden	9,777
Red Rock Pass	Hayden	7,271
Reed's Pass	U. P. R. R. Surveys	5,850
Riddle Lake, Yellowstone National Park	Hayden	8,000
River Butte	King	7,872
Rock Creek	U. P. R. R.	6,713
Rock Mountain	King	6,885
Rock Springs	U. P. R. R.	6,270
Russell, Fort	Pre. R. R. Levels	6,159
Do (flag-staff)	Wheeler	6,041
Sailor Mountain	Jones	10,046
Do Timber-line on	Jones	9,746
Saint Mary's Peak	King	7,722
Saint Vrain's Pass	Petermann	8,000
Salt Wells	U. P. R. R.	6,381
Sanders, Fort	U. P. R. R.	7,180
Do (flag-staff)	Wheeler, R. R. Levels	7,168
Sander's Peak	King	9,077
Seminole Peak	Hayden	9,930
Separation	U. P. R. R.	6,677
Separation Peak	Hayden	8,500
Sheep Butte	King	9,722
Sheridan, Mount, Yellowstone National Park	Hayden	10,385
Do	Jones	10,150
Sherman	U. P. R. R.	8,256
Shoshone Geyser Basin, Yellowstone National Park	Hayden	7,837
Shoshone Lake, Yellowstone National Park	Hayden	7,830
Sidney, Fort (flag-staff)	Wheeler	4,106
Smoothface Mountain (north), Yellowstone National Park	Hayden	10,500
Do (south), Yellowstone National Park	Hayden	10,417
Soda Hill, Yellowstone National Park	Hayden	9,518
South Pass	Hayden	7,526
Do	P. R. R. Reports	7,490
Do	U. P. R. R. Surveys	7,470
South Pass City	Hayden	7,873
Do	Petermann	7,857
South Twin Butte, Lower Geyser Basin, Yellowstone National Park	Hayden	7,977
Spearfish City	Pre. R. R. Levels	3,739
Specimen Ridge (top), Yellowstone National Park	Hayden	8,806
Split Mountain	Hayden	8,260
Stambaugh, Camp	Hayden	8,012
Do	Jones	7,767
Steel, Fort (flag-staff)	Wheeler	6,850
Do	U. P. R. R.	6,515
Steel, Mount	Hayden	7,770
Do	King	7,771
Stevenson, Mount, Yellowstone National Park	Hayden	10,420
Sulphur Springs, near Bridger's Pass	Hayden	7,008
Sweetwater Bridge	Smithsonian Inst	7,000
Sybelles Pass	U. P. R. R. Surveys	7,020
Table Mountain	Hayden	7,728
Table Rock	King	7,551

Station.	Authority.	Elevation.
		Feet.
Temple Peak	Hayden	13,249
Tóton Pass	Hayden	8,464
Thompson's Pass	Hayden	8,686
Three Crossings (of Sweetwater)	Petermann	6,134
Tie Siding	U. P. R. R.	7,899
To-gwo-tee Pass	Hayden	9,852
Do	Jones	9,621
Turret Mountain, Yellowstone National Park	Hayden	11,142
Tyghee Pass	Hayden	7,063
Union Peak	Hayden	11,593
Virginia Peak	Hayden	10,044
Volcanic Cone	Hayden	10,583
Walbach Spring	King	6,927
Walcott's		6,800
Wash-a-kie	U. P. R. R.	6,716
Wash-a-kie Mountain	King	7,984
Wash-a-kie Needle	Hayden	12,000
Do	Jones	12,253
Washakie Needle, Timber-line on		10,683
Washburne, Mount, Yellowstone National Park	Hayden	10,346
Do.....do	Jones	10,105
Do.....do.. Timber-line on, Yellowstone National Park	Hayden	9,900
West Atlantic Peak	Hayden	12,634
Whiskey Peak	Hayden	9,273
White Cañon	Hayden	9,866
Wilcox	Toner	7,033
Wind River Mountains, Timber-line on		10,160
Wind River Peak	Hayden	13,499
Wyoming	U. P. R. R.	7,086
Wyoming Peak	Hayden	11,490
Yellow Butte	Hayden	8,456
Yellowstone Lake, Yellowstone National Park	Hayden	7,738
Do	Jones	7,564
Young's Peak	L. O. Report, 1872	9,000
Yount's Peak	Hayden	11,700

ADVERTISEMENT.

(Bulletin 6.)

The publications of the United States Geological Survey are issued in accordance with the statute, approved March 3, 1879, which declares that—

"The publications of the Geological Survey shall consist of the annual report of operations, geological and economic maps illustrating the resources and classifications of the lands, and reports upon general and economic geology and paleontology. The annual report of operations of the Geological Survey shall accompany the annual report of the Secretary of the Interior. All special memoirs and reports of said Survey shall be issued in uniform quarto series if deemed necessary by the Director, but otherwise in ordinary octavos. Three thousand copies of each shall be published for scientific exchanges and for sale at the price of publication; and all literary and cartographic materials received in exchange shall be the property of the United States and form a part of the library of the organization. And the money resulting from the sale of such publications shall be covered into the Treasury of the United States."

ANNUAL REPORTS.

From the above it will be seen that only the Annual Reports, which form parts of the reports of the Secretary of the Interior and are printed as executive documents, are available for gratuitous distribution. A number of these are furnished the Survey for its exchange list, but the bulk of them are supplied directly, through the document rooms of Congress, to members of the Senate and House. Except, therefore, in those cases in which an extra number is supplied to this office by special resolution, application must be made to members of Congress for the Annual Reports, as for all other executive documents.

Of these Annuals there have been already published:

I. First Annual Report to the Hon. Carl Schurz, by Clarence King. 1880. 8°. 79 pp. 1 map.—A preliminary report describing plan of organization and publications.

II. Report of the Director of the United States Geological Survey for 1880–'81, by J. W. Powell. 1882. 8°. lv, 588 pp. 61 pl. 1 map.

III. Third Annual Report of the United States Geological Survey, 1881–'82, by J. W. Powell. 1883. 8°. xviii; 564 pp. 67 pl. and maps.

IV. Fourth Annual Report of the United States Geological Survey, 1882–'83, by J. W. Powell. 1884. 8°. xii, 473 pp. 85 pl. and maps.

No copies of the Fourth Annual have as yet been ordered by Congress for distribution by the Geological Survey.

MONOGRAPHS.

The Monographs of the Survey are printed for the Survey alone, and can be distributed by it only through a fair exchange for books needed in its library, or through the sale of those copies over and above the number needed for such exchange. They are not for gratuitous distribution.

So far as already determined upon, the list of these Monographs is as follows:

I. The Precious Metals, by Clarence King. In preparation.

II. Tertiary History of the Grand Cañon District, with atlas, by Capt. C. E. Dutton. Published.

III. Geology of the Comstock Lode and Washoe District, with atlas, by George F. Becker. Published.

IV. Comstock Mining and Miners, by Eliot Lord. In press.

V. Copper-bearing Rocks of Lake Superior, by Prof. R. D. Irving. In press.

VI. Older Mesozoic Flora of Virginia, by Prof. William M. Fontaine. In press.

VII. Silver-lead Deposits of Eureka, Nevada, by Joseph S. Curtis. In press.

VIII. Paleontology of the Eureka District, Nevada, by Charles D. Walcott. In press.

Geology and Mining Industry of Leadville, with atlas, by S. F. Emmons. In preparation.

Geology of the Eureka Mining District, Nevada, with atlas, by Arnold Hague. In preparation.

Coal of the United States, by Prof. R. Pumpelly. In preparation.

Iron in the United States, by Prof. R. Pumpelly. In preparation.

Lesser Metals and General Mining Resources, by Prof. R. Pumpelly. In preparation.

Lake Bonneville, by G. K. Gilbert. In preparation.

Dinocerata. A monograph on an extinct order of Ungulates, by Prof. O. C. Marsh. In press.

Sauropoda, by Prof. O. C. Marsh. In preparation.

Stegosauria, by Prof. O. C. Marsh. In preparation.

Of these Monographs, Nos. II, III, and IV are now published, viz:

ADVERTISEMENT.

II. Tertiary History of the Grand Cañon District, with atlas, by C. E. Dutton, Capt. U. S. A. 1882. 4°. 264 pp., 42 pl. and atlas of 26 double sheets folio. Price $10.12.

III. Geology of the Comstock Lode and Washoe District, with atlas, by George F. Becker. 1882. 4°. 422 pp. 7 pl. and atlas of 21 sheets folio. Price $11.

IV. Comstock Mining and Miners, by Eliot Lord, 1883. 4°. 451 pp. 3 pl. Price $1.50.

Nos. V, VI, VII, and VIII are in press and will appear in quick succession. The others, to which numbers are not assigned are in preparation.

BULLETINS.

The Bulletins of the Survey will contain such papers relating to the general purpose of its work as do not properly come under the heads of ANNUAL REPORTS or MONOGRAPHS.

Each of these Bulletins will contain but one paper and be complete in itself. They will, however be numbered in a continuous series, and will in time be united into volumes of convenient size. To facilitate this each Bulletin will have two paginations, one proper to itself and another which belongs to it as part of the volume.

Of this series of Bulletins, Nos. 1, 2, 3, 4, 5, and 6 are already published, viz:

1. On Hypersthene-Andesite and on Triclinic Pyroxene in Augitic Rocks, by Whitman Cross, with a Geological Sketch of Buffalo Peaks, Colorado, by S. F. Emmons. 1883. 8°. 42 pp. 2 pl. Price 10 cents.

2. Gold and Silver Conversion Tables, giving the coining value of Troy ounces of fine metal, &c., by Albert Williams, jr. 1883. 8°. 2 p. l. 8 pp. Price 5 cents.

3. On the Fossil Faunas of the Upper Devonian, along the meridian of 76° 30′, from Tompkins County, New York, to Bradford County, Pennsylvania, by Henry S. Williams. 1884. 8°. 31 pp.. Price 5 cents.

4. On Mesozoic Fossils, by Charles A. White. 1884. 8°. 36 pp. 9 pl. Price 5 cents.

5. A Dictionary of Altitudes in the United States, by Henry Gannett. 1884. 8°. 325 pp. Price 20 cents.

6. Elevations in Canada, by J. W. Spencer, 1884. 8°. — pp. Price 5 cents.

Nos. 7 and 8 are in press.

STATISTICAL PAPERS.

A fourth series of publications having special reference to the mineral resources of the United States is contemplated. Of that series the first has been published, viz: Mineral Resources of the United States, by Albert Williams, jr. 1883. 8°. xvii, 813 pp. Price 50 cents.

Correspondence relating to the publications of the Survey, and all remittances—which must be by postal note or money order—should be addressed to the

DIRECTOR OF THE UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C.

WASHINGTON, D. C., *June* 15, 1884.

DEPARTMENT OF THE INTERIOR

BULLETIN

OF THE

UNITED STATES

GEOLOGICAL SURVEY

No. 6

WASHINGTON
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UNITED STATES GEOLOGICAL SURVEY
J. W. POWELL DIRECTOR

ELEVATIONS

IN THE

DOMINION OF CANADA

BY

J. W. SPENCER

WASHINGTON
GOVERNMENT PRINTING OFFICE
1884

LETTER OF TRANSMITTAL.

COLUMBIA, MO., *January*, 1884.

SIR: I have the honor herewith of transmitting to you, for publication, almost all of the more important elevations in the provinces of Ontario and Quebec, in Canada, which have been ascertained by railway and canal surveys, completed at the close of the year 1882. Especially in the region between the Great Lakes is the record nearly complete.

I have the honor, sir, to be your obedient servant,

J. W. SPENCER.

Hon. J. W. POWELL,
Director of the United States Geological Survey.

PREFACE.

The knowledge of accurate levels in the study of many geological problems is growing to be as necessary as the balance has been in chemical science. In my various studies of the "Geology of the Region about the Western End of Lake Ontario," the necessity of having accurate altitudes compelled me to collect many railway levels, and often to ascertain the altitudes of other points myself. The result was that between 1876 and 1882 I had collected, with much trouble, the altitudes of all the railroads whose profiles were in existence. Owing to the fact that many of the smaller roads had been constructed independently, and subsequently united with larger organizations, it not infrequently happened that their profiles were buried away in some obscure office, or even altogether lost.

The elevation of Lake Erie above Lake Ontario, by the levels of the Welland Canal, is 326.75 feet. The United States Lake Survey's determination of the height of Lake Erie above mean ocean level is 572.86 feet Subtracting the one from the other, the elevation of Lake Ontario above mean ocean level would be 246.11 feet. The elevation of Lake Ontario, given by the United States Lake Survey, is 246.61 feet above mean ocean level.

The Canadian survey levels have been referred to either Lake Ontario, to Lake Erie, or to Lake Saint Peter. The latter is an expansion of the Saint Lawrence River, to which high tide reaches, and its mean level is 11 feet above the mean level of the ocean.

Since these tables were compiled in 1882, the Grand Trunk Railway Company has absorbed the Great Western Railway and most of the other Canadian lines, but their original names are everywhere retained as divisions or branches of the Grand Trunk Railway.

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ELEVATIONS IN THE DOMINION OF CANADA.

By J. W. Spencer.

RAILROAD PROFILES.

GREAT WESTERN RAILWAY, MAIN LINE.

Distance from Niagara Falls.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
		Feet.	*Feet.*
	Niagara River:		
	East side of cañon	300	547
	West side of cañon	308	555
0.00	Niagara Falls, Ontario	326	573
2.84	Track	362	609
2.84	Summit (sand and gravel)	386	633
324.84	St. David's valley, track over	292	539
9.19	Meritton	143	390
9.39	Welland canal crossing	142	389
10.61		120	367
10.70	Bed of creek	20	267
11.10	St. Catharine's	110	357
14.26	Bed of Fifteen-Mile creek	00	247
15.34	Sixteen-Mile creek	—4	243
15.45		65	312
16.95	Jordan station	64	311
17.23	Twenty-Mile creek, bed	—8	239
22.69	Beamsville station	47	294
26.50	Grimsby station	40	287
31.72	Winona station	38	285
37.22	Stony Creek station	28	275
43.33	Hamilton station	8	255
45.02	Toronto Branch junction	58	305
49.00	Mile post	234	481
49.41	Summit of gravel ridge (original surface)	308	555
	Spencer's creek:		
49.53	Bed	160	407
49.53	Track	260	507
49.73	Dundas station	270	517
51.70	Flamboro' station (old)	368	615
53.75	Summit of drift hills	520	767
54.73	Copetown station	502	749
54.92	Bed of Elliot's pond	475	722
59.09	Lynden station	504	751
61.84	Bed of valley	415	662
	Harrisburg station:		
62.25	Track	487	734
62.25	Original ground	504	751
64.01	Fairchild's creek, bridge	480	727
64.01	Do. do. bed	420	667
67.23		595	842

Great Western, main line—Continued.

Distance from Niagara Falls.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
	Grand river:		
69.50	East side	577	894
69.92	Bed	495	742
72.06	West side	577	894
74.90	Paris station	595	842
75.19	.....	610	857
75.23	Bed of valley of Nith's creek	550	797
	.....	620	867
78.98	Princeton station	685	932
79.92	Horner's Creek, bed	635	882
84.00	Governor's Road, siding	720	967
86.27	Eastwood station	726	973
87.69	Summit	775	1,022
90.72	Woodstock station	710	957
95.55	Beechville station	660	907
100.00	Ingersoll station	632	879
109.66	Dorchester station	605	852
119.28	London, Richmond street	559	806
	Thames River:		
119.50	East side	553	800
	Bed	507	754
119.73	West side	560	807
	Cove of Thames:		
120.17	East side	550	797
120.64	Bottom	505	752
122.82	West side	680	927
129.17	Komoka station	564	811
139.96	Longwood station	505	752
142.50	Canada Southern railroad crossing	.....	.....
144.89	Oppin station	496	743
149.62	Glencoe station	483	730
155.87	Newbury station	455	702
160.70	Bothwell station	444	691
169.51	Thamesville bridge	376	623
169.51	bed of river	340	587
174.34	Lewisville station	368	615
183.33	Chatham station	351	598
198.11	Baptist Creek station	348	595
202.84	Stoney Point station	340	587
211.66	Bell river, bed	320	567
220.81	Tecumseh station	343	590
228.82	Windsor station	335	582

GREAT WESTERN RAILWAY—TORONTO BRANCH.

Distance from Hamilton Station.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Hamilton station	8	
1.62	Toronto junction	58	
2.15	Track over old outlet of Dundas marsh	82	
2.15	Piles driven in marsh to below lake Ontario	—40	
4.08	Waterdown station, ground	98	
4.57	Lake Terrace (Ballast Hill)	118	
7.02	Burlington station	93	

Toronto branch—Continued.

Distance om Hamil-on Station.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
	Twelve-Mile creek:		
12.94	Track	98	345
12.94	Bed of creek	29	276
13.50	Bronté station	99	346
17.07	Bed of creek	6	253
17.51	Oakville station	93	340
20.62	.....	104	351
	Credit valley:		
24.46	South side	36	283
	Piles driven to	—20	227
25.88	North side	34	281
29.30	Track	55	312
29.30	Bed of valley	10	257
32.19	Mimico station	60	307
32.69	Mimico river, bed	—2	245
39.00	Toronto station	8	255

G. W. R.—BRANTFORD AND TILSONBURG LINE.

Distance om Harris-burg junc-tion.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Harrisburg junction	487	734
0.75	Fairchild's creek, bed	412	659
7.31	G. T. R. crossing	439	686
	Brantford:		
8.14	Bridge over Grand river	412	659
8.14	Bed of Grand river	398	645
12.60	Mount Pleasant station	563	810
15.57	Mount Vernon station	592	839
17.30	Burford station	597	844
21.00	Harley station	590	837
28.08	Norwich station	597	844
34.90	Springford station	575	822
	Tilsonburg:		
39.12	Canada Southern railway crossing	550	797
40.25	Station	538?	785
42.75	Junction	.....	.....

G. W. R.—SARNIA BRANCH.

Distance rom Lon-don.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	London station	559	806
4.22	Hyde Park junction	639	886
10.00	Komoka junction	575	822

Sarnia branch—Continued.

Distance from London.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
20.23	Strathroy station	500	747
	Do. Sydenham river, bed	475	722
33.38	Watford station	540	787
41.81	Wanstead station	455	702
45.38	Wyoming station	465	712
51.10	Mandamin station	400	647
60.89	Sarnia (near lake Huron)	342	589

G. W. R.—LONDON AND PORT STANLEY BRANCH.

Distance from Port Stanley.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Port Stanley, level of lake Erie	327	574
3.70		443	690
4.55	Kettle Creek bridge	488	735
7.87	Saint Thomas station	511	758
16.18	Summit of track	673	920
23.58	London	567	814

G. W. R.—LONDON, HURON AND BRUCE BRANCH.

Distance from London.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	London (Richmond st.)	559	806
4.22	Hyde Park junction	639	886
11.22	Ilderton station	690	937
15.58	Brecon station	653	900
19.22	Au Sable river, track	624	871
	Do. do. bed	598	845
20.69	Clandeboye station	641	888
26.50	Centralia station	620	867
31.11	Exeter station	628	875
37.17	Hensall station	652	899
43.23	Brucefield station	643	890
50.06	Clinton station	672	919
56.20	Maitland river, bed	695	942
56.86	Londesborough station	727	974
60.80	Blyth station	834	1,081
62.55	Summit	877	1,124
67.23	Belgrave station	815	1,062
72.06	Bed of valley	765	1,012
74.00	Wingham station	834	1,081

London, Huron and Bruce branch—Continued.

Distance from Glencoe junction.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Glencoe junction	48.	728
	Thames river:		
11.70	Track	453	700
11.70	Bed	383	630
15.20	Lawrence (near)	495	742
	Kettle creek:		
26.75	Bridge	500	747
	Bed of	420	667
28.00	St. Thomas (near)	520	767
37.75	Aylmer (near)	514	761
46.20	Corinth station	520	767
52.00	Otter creek, bed of	404	651
53.25	Tilsonburg (near)	538	785
56.50	Cortland (near)	529	776
	Big Creek:		
63.00	Track	515	762
63.00	Bed of	424	671
64.25	Delhi (near)	548	795
73.00	Simcoe station	472	719
83.50	Jarvis station	454	701
92.00		468	715
96.60	Grand river bridge, near Cayuga station	368	615
96.60	Bed of Grand river	324	571
103.20	G. T. R. crossing	369	616
123.00	Frank's creek	328	575
125.75	Welland canal feeder	339	586
128.50	Welland railway crossing	330	577
138.00	Stevensville station	345	592
142.75	Erie and Niagara railway crossing	348	595
145.40	Niagara river	325	572

VELLINGTON, GRAY AND BRUCE RAILWAY COMPANY, OPERATED BY THE G. W. R. CO.

Distance from Harrisburg junction.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Harrisburg, junction with main line of G. W. R	487	734
2.40	Fairchild's creek (Dumfries branch), track	513	760
6.13	Branchton station	650	897
11.82	Galt station	641	888
16.00	Preston station	680	927
17.72	Ballast Hill	718	965
19.07	Speed river, track	686	933
19.38	Hespeler station	695	942
27.33	Guelph station	832	1,079

Wellington, Grey and Bruce railway—Continued.

Distance from Guelph.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Guelph station	832	1,078
8.70	Hurst's creek, bed	902	1,149
	Swan creek:		
11.02	Track	970	1,217
11.02	Bed	911	1,158
13.31	Elora station	1,050	1,297
	Do. Grand river:		
14.75	East side	1,080	1,327
	Bed	992	1,239
16.00	Fergus station	1,111	1,358
	Irwine river:		
19.00	East side	1,135	1,382
	Bed	1,074	1,321
24.60	Summit	1,235	1,482
27.30	Goldstone station	1,214	1,461
31.10	Drayton station	1,147	1,394
35.00	Moorefield station	1,104	1,351
42.10	Palmerston station	1,067	1,314
47.80	Harriston station	1,017	264
54.23	Clifford station	987	1,234
63.23	Mildmay station	783	1,030
69.01	Walkerton station	686	933
77.80	Pinkerton station	614	861
84.29	Paisley station	529	776
	Teeswater river:		
84.61	Bed	462	709
84.61	Track over	525	772
97.00	Port Elgin station	428	675
101.14	Southampton station	369	616
101.30	Do. Lake Huron, Aug., 1872	335	582

W. G. & B. R.—SOUTH EXTENSION.

Distance from Palmerston.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Palmerston station	1,067	1,314
5.62	Gowanstown station	1,038	1,285
8.71	Listowel station	1,016	1,263
14.68	Newry station	957	1,204
18.81	Henfryn siding	919	1,166
21.78	Ethel station	927	1,174
27.35	Brussels station	875	1,122
30.00	Gravel bed	848	1,095
34.15	Bluevale station	832	1,079
35.00	Maitland river, bed	797	1,044
37.22	Wingham station	835	1,082
38.54	Maitland river, bed	757	1,004
43.64	Kinloss (Whitechurch) station	799	1,046
50.00	Lucknow station	663	910
57.00	Pine river, bed	536	783
58.18	Ripley siding	560	807
66.38	Kincardine station	343	590
66.41	Kincardine, Lake Huron	335	582

WELLAND RAILWAY—OPERATED BY G. W. R.

Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
	Feet.	*Feet.*
Lake Ontario	.....	247
Saint Catherine's, old station	128	375
G. W. R. crossing	210	457
Thorold station	306	553
Allanburg station	345	592
Port Robinson station	342	589
Welland river bed	322	569
Welland station	355	602
Port Colborn station	339	586
Lake Erie	330	577

NOTE.—All the elevations along the Great Western railway and its branches were obtained from the various profiles, through the kindness of the chief engineer, and reduced to a common datum.

The elevations given are those of track when opposite the station; elsewhere those of the natural ground have been adopted. The above tables cover most undulations of surface ranging more than 20 or 30 feet in height.

HAMILTON AND NORTHWESTERN RAILWAY.

Distance from Port Dover.	Location.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Lake Erie, at Port Dover	328	575
0.15	.....	380	627
8.90	Jarvis, Loop Line crossing	452	699
14.80	.....	483	730
15.96	Hagersville (near)	449	696
21.00	.....	382	629
23.30	.....	438	685
	Grand river at Seneca:		
23.56	South bank	405	652
	Bed	365	622
23.75	North bank	397	644
24.31	Seneca, crossing of plank road	406	653
26.20	.....	439	686
28.01	Chippewa creek	424	671
29.69	Summit	493	740
34.95	Brow of Niagara escarpment	396	643
39.18	Hamilton:		
	Wentworth street, south	130	377
40.00	Station (King street)		
	Barton street	30	277
42.00	Wentworth street, north	19	266
48.50	Burlington, beach (Ocean House)	8	255
50.00	.....do.....station	6	253
51.50	.....do.....G. W. R crossing	71	318
57.40	.....	276	523
63.25	Milton station	414	661
76.00	Georgetown (gravel bed)	644	891
78.50	Glen Williams	663	910
93.00	Caledon (sand bed near)	695	942

Hamilton and Northwestern Railway—Continued.

Distance from Port Dover.	Location.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
100.20	Summit north of Palgrave	722	969
111.50	Beeton junction	469	716
120.60	Everett station	549	796
129.20	Glencairn station	491	738
139.50	Summit	805	1052
143.00	Duntroon station	689	936
147.60	Nottawa station	460	707
150.20	Collingwood station	342	589
	.....do.....lake Huron	331	578
0.00	Beeton junction, on branch	469	716
12.50	Thornton station	695	942
14.00	Summit station	751	998
22.30	Allandale station	508	755
26.00	Barrie station	625	872
	Barrie, Lake Simcoe	475	722

NOTE.—South of Hamilton, elevations refer to original ground. North of Hamilton reference is to track.

NORTHERN RAILWAY—MAIN LINE.

Distance from Toronto.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Lake Ontario, at Toronto	00	247
7.00	Gravel pit	204	451
8.12	Weston station	337	584
12.33	York station	425	672
14.50	Thornhill station	386	633
19.00	Richmond Hill (Gravel pit)	600	847
22.75	King station	708	955
26.60	Summit	755	1,002
34.30	Newmarket station	525	772
38.00	Holland Landing	496	743
41.00	.....do .river	478	725
42.00	Bradford station	478	725
44.50	Scanbons station	494	741
49.00	Gilford station	506	753
52.00	Lefroy station	532	779
53.00	Gravel ridge	520	767
57.00	Bramley station	641	888
57.75	Craigvale station	632	879
61.50	Thompson station	545	792
62.50	Gravel pit	520	767
63.00	Allandale (near Barrie)	491	738
63.00	Lake Simcoe	475	722
68.75	Colwell junction	503	750
72.75	Nottawasaga river	380	627
73.50	Angus (Pine river)	380	627
74.50	Gravel ridge	389	636
77.60	Brentwood station	400	647
80.00	Sunnidale station	375	622
86.00	Stayner station	470	717

Northern Railway—Main Line—Continued.

Distance from Toronto.	Location.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
94.70	Collingwood station	343	590
94.70	.....do.....Lake Huron	337	584
100.00	Craigleith station	344	591
106.10	Gravel pit	354	601
107.00	Thornbury station	365	612
112.00	Summit	510	757
115.00	Meaford station	427	674

NORTHERN RAILWAY—MUSKOKA BRANCH.

Distance from Toronto.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
64.12	Barrie (Lake Simcoe)	475	722
64.20	...do...station	479	726
66.30	Kempenfeldt	510	757
70.00	Gowan	572	819
71.20	Summit	593	840
78.20	Hawkestone	532	779
81.00	.....do	575	822
82.50	Gravel pit	483	730
86.30	Orillia	479	726
88.50	Narrows of Lake Couchouching	486	733
94.00	Longford station	489	736
95.00		519	766
98.00	Severn river, east branch	483	730
99.00	Washago	482	729
99.50	Severn river, west branch	485	732
100.50	...do...station	478	725
100.50	...do...station (water)	464	711
100.70	...do...river	.....	.....
102.40	Gravel pit	480	727
104.40		369	616
106.20	Lethbridge station	509	756
108.00	Rock pass	530	777
109.30	Summit	605	852
111.30	Gravenhurst station	572	819
112.40	Muskoka lake	500	747

NORTHERN RAILWAY—PARRY SOUND BRANCH.

Distance from Colwell junction.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Colwell junction (68.75 miles from Toronto)	503	750
3.71	.....	457	704
4.15	Sand pit	451	698
7.58	Minessing station	372	619
11.04	Sand bed	490	737
15.78	Phelpston station	477	724
22.63	Marsh, track over	440	687
25.95	Wyeville station	525	772
30.36	Summit of branch	544	791
35.61	Penetanguishene station	342	589

The Hamilton and Northwestern Railway Company and the Northern Railway Company are now amalgamated. The levels of both roads were furnished through the kindness of Mr. Harry Holgate, assistant engineer of the united roads. The levels from Lake Erie to Hamilton, were obtained from the chief engineer during the construction before the stations were located. The altitudes of the stations on Northern Railway refer to track.

TORONTO, GREY AND BRUCE RAILWAY.

Distance from Toronto.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Toronto station	8	255
2.25	....do...Queen Street junction	57	304
5.00	Carlton (sand and gravel bed)	160	407
8.50	Weston station	182	429
14.00	Sand and gravel bed	280	527
	Humber valley:		
14.50	East side	268	515
15.20	Bridge	224	471
16.20	West side / Woodbridge station	311	558
18.00	Sand and gravel bed	370	617
21.50	Kleinburg	468	715
26.30	Bolton station	591	838
32.75	Mono Road	729	976
34.00	Gravel bed	710	957
37.00	....do	990	1,237
38.75	.....	1,130	1,377
41.25	Charleston station (gravel bed near by)	1,120	1,367
44.60	Alton station	1,051	1,298
48.60	Orangeville station	1,151	1,398
52.50	.....do .....junction	1,369	1,616
58.00	Sand and gravel bed	1,340	1,587
64.50	Shelburne station	1,382	1,629
75.80	Dundalk station	1,454	1,701
76.20	Summit	1,462	1,709
81.00	Proton station	1,366	1,613
86.00	Flesherton (adjacent sand and gravel bed)	1,310	1,557
93.00	Markdale station	1,112	1,359
98.00	Berkley station	1,062	1,329

Toronto, Grey and Bruce Railway—Continued.

Distance from Toronto.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
100.00	Gravel (deposits for several miles)	1,000	1,247
102.00	Williamsford station	965	1,212
108.80	Speed river	700	947
109.00	Chatsworth station (gravel beds)	697	944
111.00	Sydenham river	690	937
114.20	Rockford station	655	912
	Owen sound:		
120.80	Station	339	586
	Georgian bay	335	582

ALONG WEST BRANCH.

52.60	Orangeville junction	1,369	1,616
56.50	Amaranth station (sand and gravel)	1,299	1,546
58.50	Waldemar station	1,248	1,495
61.80	Luther station	1,297	1,544
68.70	Summit	1,332	1,579
72.50	Arthur	1,278	1,525
79.00	Kenilworth	1,239	1,486
84.00	Sand and gravel bed	1,130	1,377
86.00	do	1,130	1,377
87.00	Mount Forest station	1,103	1,350
91.00	Page station	1,036	1,283
94.70	Harriston station	999	1,246
103.00	Fordwich station	953	1,200
108.00	Gorrie and Wroxeter station	876	1,123
110.00	Sand and gravel beds	850	1,097
120.00	Teeswater station	777	1,024

Elevations, referring to track, were furnished through the kindness of Edmund Wragg, Esq., chief engineer and general manager of the railroad.

CREDIT VALLEY RAILROAD.

0.00	Toronto station	8	255
6.80	Lambton station	165	412
9.90	Humber river bed	153	400
14.20	Cooksville station (gravel)	146	393
17.40	Streetsville station	252	499
20.40	do junction	306	553
32.10	Milton station	416	663
38.70	Campbellville station	682	929
51.70		760	1,007
57.20	Galt station	689	936
57.20	Galt, bed of Grand river	616	863
67.20	Ayr station	718	965
72.10	Wolverton station	715	962
74.30	Drumbo station	766	1,013
78.60	Blandford station	725	972
81.60	Innerhip station	725	972
87.80	Woodstock station	700	947

ORANGEVILLE AND ELORA BRANCH.

Distance from Toronto.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
21.60	Streetsville junction	305	552
23.60	Meadsville station	319	566
29.10	Brampton station	477	724
45.50	Forks of the Credit	218	1,068
	Credit river:		
46.25	Bridge	861	1,108
46.25	Bed	761	1,008
48.20	Elora junction (Church Falls)	1,013	1,260
56.50	Orangeville	1,111	1,358
48.20	Elora junction	1,013	1,260
52.90	Erin station	1,048	1,295
56.60	Hillsburg station	1,177	1,424
61.10	Garafraxa station	1,205	1,452
64.50	Summit station	1,286	1,533
73.20	Fergus station	1,110	1,357
75.70	Elora station	1,054	1,301

The abov levels were kindly furnished by H. S. Holt, Esq., chief engineer.

CANADA SOUTHERN RAILWAY.

Distance from Buffalo.	Localities.	Elevation above Lake Erie.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Niagara river at Buffalo, September, 9, 1870	00	573
0.11	Fort Erie station	24	597
0.90	Victoria station	34	607
2.22	Erie and Niagara railway junction	35	608
6.52	Black creek bed	— 5	568
7.22	Stevensville station	16	589
14.20	Brookfield	37	610
17.51	Welland station	16	589
17.69	....do ...canal bed (1880)	—11	562
22.50		15	588
23.10	Forks creek, bed	—12	561
26.50	Perry station	17	590
34.91	Attercliff station	18	591
42.31	Canfield (G. T. R. crossing)	48	621
64.12		92	665
48.80	Dean's station	64	637
49.53	Grand river, bed	8	581
50.50	Decew's pond, bed	27	600
55.49		125	698
58.62	Hagersville station	167	740
66.49	Villa Nova station	159	732
68.56	Surface of ground	182	755
68.57	Nanticoke creek bed	145	718
71.38	Waterford station	190	763
77.80	Windham station	244	817
82.10	Pt. Dover and Lake Huron railway crossing	219	792
83.33	Hawtrey	213	786
88.00	Otter creek bed	159	732
88.43	Cornell station	224	797
93.80	Tilsonburg station	233	806
105.19	Springfield station	223	796

Canada Southern Railway—Continued.

Distance from Buffalo.	Localities.	Elevation above Lake Erie.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
112.01	Cat Fish creek	141	714
118.29	Saint Thomas station	193	766
119.66	Kettle creek bed	92	665
119.75	Surface of ground	184	757
122.20	Saint Clair junction	192	765
127.27	Shedden station	153	726
131.17	Iona station	172	745
143.61	Bismarck station	138	711
148.10	Rodney station	120	693
151.40	Taylor station	150	723
154.10	Muirkirk station	152	725
156.23	Highgate station	166	739
161.82	Ridgetown station	87	660
168.00	Harwich station	78	651
175.20	Charing Cross station	55	628
181.40	Buxton station	29	602
185.41	Fletcher station	26	599
192.50	Tilbury station	19	592
195.00	Baptist creek	9	582
199.00	Comber station	31	604
207.90	Woodslee station	46	619
213.50	Essex Center station	73	646
221.40	Colchester station	38	611
227.00	Canard river bed	12	585
228.80	Amherstburg, top of bank	27	600
229.20	Detroit river	7	580

CANADA SOUTHERN RAILWAY—SARNIA BRANCH.

Distance. from St. Thomas.	Localities.	Elevation above Lake Erie.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Saint Thomas station	193	766
3.80	Saint Clair junction	192	765
5.30	Loop line (S. W. R.) crossing	174	747
9.10	Southwald station	172	745
12.20	Thames river:		
	East bank	146	719
	Bed	75	648
12.50	West bank at Delaware station	157	730
19.20	Melbourne station	162	73
20.20	G. W. R. crossing	173	746
25.40	Ekfrid station	177	750
31.30	Walker's station	159	732
35.10	West bank of Sydenham river	160	733
40.70	Inwood station	118	691
48.00	Oil City station	90	663
49.10	Fox Creek bed	65	638
56.70	Brigden station	63	636
57.40	Bear Creek bed	18	591
66.40	Courtright	11	584
	....do.....at Saint Clair river	.....	.....

The elevations of the Canada Southern railway were furnished through the kindness of W. B. Gossage, Esq., chief engineer of the C. S. R., in 1881.

GRAND TRUNK RAILWAY—BRANTFORD AND GODERICH DISTRICT.

Distance. from Int. Bridge.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	International Bridge	341	588
1.75	Niagara river surface	320	567
10.00	Fort Erie station	359	606
20.00	Bertie station	371	618
33.00	Port Colborne station	334	581
38.88	Welland canal feeder bridge	339	586
46.25	Dunville station	338	585
52.00	Canfield junction Crossing	369	616
59.38	Cook's station	396	643
62.75	Seneca (Caledonia) station	411	658
64.75		434	681
69.50	Big creek bed	370	617
75.00	Onondaga station	417	664
76.00		484	731
71.38	G. W. R. crossing	441	688
81.50	Brantford station	459	706
83.50		609	856
	Grand river:		
	Bed	568	815
	Bridge	485	732
84.25	Paris station	596	843
87.00		663	910
88.38	Nith's creek bed	589	836
93.38	Summit near Drumbo	777	1,024
98.25	Bright station	794	1,041
108.00	Tavistock station	890	1,137
115.75	Stratford station	943	1,190
120.75	....do...bed of Avon river	892	1,139
120.75	Sebringville station	926	1,173
123.12	Summit	966	1,213
128.75	Mitchell station	875	1,122
133.63	Dublin station	857	1,104
140.25	Seaforth station	762	1,009
148.38	Clinton station	674	921
153.25		670	917
161.25	Goderich station	483	730
163.00	....do...(elevation near surface of Lake Huron)	338	585

GRAND TRUNK RAILWAY—WESTERN DIVISION.

Distance from Montreal.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
333.00	Toronto station	8	255
338.12	Carlton station	159	406
341.38	Weston station	179	426
342.50	Humber bridge	211	458
342.50	...do....river	142	389
346.50	Mimico bridge	293	540
346.50	...do...river	265	512
348.12	Malton station	303	550
353.75	Etobicoke river bed	443	690

Grand Trunk Railway—Western Division—Continued.

Distance from Montreal.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
354.12	Brampton station	466	713
359.63	Norval station	572	819
361.25	Credit bridge	581	828
361.25	.....do..river	467	714
362.00	Georgetown station	600	847
362.75	.....do..junction (H. & N. W. Ry.)	627	874
365.25	Limehouse station	810	1,057
366.75	....do..siding	847	1,094
368.38	Acton station	912	1,159
372.63	.....	972	1,219
373.75	Eremosa river (water)	894	1,141
374.00	Rockwood station	936	1,183
381.25	Speed river bed	783	1,030
381.38	Guelph station	821	1,068
386.50	Mosboro station	838	1,085
391.00	Breslau station	778	1,025
391.50	Grand river bed	714	961
395.38	Berlin station	854	1,101
397.12	Waterloo station	811	1,058
396.00	Summit	869	1,116
395.88	Berlin junction	848	1,095
401.75	.....	730	977
404.38	Bridge near Blair	653	900
408.50	Galt station	633	880
401.75	Petersburg station	964	1,211
402.88	.....do.....summit	1,002	1,249
405.12	Baden station	910	1,157
407.62	Hamburg station	880	1,127
408.25	Nith river, bed	836	1,083
414.75	Shakespeare station	937	1,184
420.50	Port Dover and Lake Huron Ry. Crossing	947	1,194
421.25	Stratford station	943	1,190
426.38	Saint Paul's station	919	1,166
431.38	Saint Mary's station	836	1,083
431.38	London Branch junction	836	1,083
444.50	Thorndale station	689	936
454.00	London station	568	815
432.25	Thames river (water)	741	988
438.00	Fish creek (bed)	698	945
440.75	Granton station	787	1,034
446.62	Lucan station	744	991
453.75	Ailsa Craig station	507	754
461.50	Parkhill station	416	663
467.75	Au Sable bridge	370	617
467.75	.....do...river (bed)	347	594
470.00	Widder station	435	682
473.50	Tool's Creek bridge	476	723
478.88	Forrest station	465	712
488.00	Camalachie station	402	649
492.25	Perch station	348	595
496.25	Blackwell station	355	602
501.50	Sarnia station	340	587
	....do.(water in St. Clair river)	335	582

Grand Trunk Railway—Western Division—Continued.

Distance from Port Huron.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
	IN MICHIGAN.		
Miles.		*Feet.*	*Feet.*
	Port Huron station	341	588
505.63	Chicago and Grand Trunk junction	376	623
523.00	Michigan Air-Line junction	476	723
528.88	New Haven	382	629
540.50	Clinton river (water)	326	573
552.00	Connois river (water)	361	608
561.00	Detroit junction	347	594

GRAND TRUNK RAILWAY—CENTRAL DIVISION.

Distance. from Montreal.	Localities.	Elevation above Lake Saint Peter.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
*0.00	Montreal (crossing Wellington street)	40	51
14.50	Point Clair station	98	109
20.50	Saint Anne station	113	124
24.00	Vaudreuil station	82	93
37.50	Coteau Landing station	150	161
43.12	Rivière Baudette station	162	173
45.00	Interprovincial line	160	171
53.75	Lancaster station	154	165
67.38	Cornwall station	181	192
81.50	Farran's Point station	231	242
99.00	Iroquois station	232	243
104.38	Edwardsburg (Cardinal) station	266	277
112.12	Prescott junction	292	303
113.50	....do..station	299	310
125.25	Brockville station	270	281
129.50	Lynn station	275	286
138.00	Mallorytown station	325	336
146.12	Lansdown station	323	334
155.00	Gananoque station	250	261
162.50	Ballantyne's station	350	361
168.38	Rideau station	292	303
172.63	Kingstown station	263	274
197.00		359	370
198.50	Napanee river (water)	266	277
206.63	Tyendinaga station	325	336
220.25	Belleville station	275	286
220.62	....do ...Moira river (water)	256	267
231.88	Trent river (water)	238	249
232.12	Trenton station	254	265
241.50	Brighton station	293	304
245.00	The Dangers	259	270
249.00	Colborne station	311	322
263.50	Colbourg station	286	297
270.25	Port Hope station	276	287
278.00	Newtonville station	283	294
288.88	Newcastle station	285	296
290.25	Bowmansville station	252	263
293.25		369	380

Grand Trunk Railway—Central Division—Continued.

Distance from Montreal.	Localities.	Elevation above Lake Saint Peter.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
299.50	Oshawa station	322	333
303.50	Whitby station	257	268
309.75	Duffin's Creek station	276	287
316.50	Port Union station	255	266
323.38	Summit	547	558
324.00?	Scarboro junction	535	546
331.38	Don creek (bridge)	242	253
333.00	Toronto station	243	254
.....	...do....Lake Ontario	235	246

GRAND TRUNK RAILWAY—EASTERN DIVISION.

0.00	Montreal:		
	Point Saint Charles	40	51
	Center of Victoria bridge	104	115
	Saint Lawrence river (beneath Victoria bridge)	22	33
6.50	Saint Lambert's junction	65	76
10.00	Saint Hubert's station	80	91
14.88	Saint Bruno station	87	98
21.12	Belœil station	52	63
21.12	...do ..Richelieu river (surface)	37	48
22.25	Saint Hilaire station	75	86
28.12	Saint Madeleine station	108	119
35.62	Saint Hyacinthe station	100	111
36.12	Yomaska river (bed)	54	65
42.62	Britannia Mills station	211	222
48.00	Upton station	193	204
	...do...Black river (surface)	156	167
54.38	Acton station	301	312
54.75	Southeastern Railway junction	310	321
59.75	Moose river (surface)	330	341
62.00	Danby station	427	438
66.12	South Durham station	598	609
69.12	Lisgar station	518	529
74.75	Saint Francis river (surface)	466	477
76.50	Richmond station	380	391
86.38	Windsor station	409	420
94.50	Brompton Falls station	460	471
100.75	Magog river	452	463
101.12	Sherbrooke station	475	486
104.13	Lennoxville station	489	500
111.12	Waterville station	635	646
114.37	Compton station	723	734
117.13	Richby station	808	819
122.50	Coaticoke station	996	1,007
127.62	Dixville station	1,116	1,127
132.50	International boundary (Canada and the United States)	1,340	1,351
137.00	Lake station, Vermont	1,241	1,252
141.25	Summit, Vermont	1,367	1,378
147.88	Island Pond station, Vermont	1,176	1,187
155.25	Wenlock station, Vermont	1,140	1,151
162.75	Connecticut River Bed, New Hampshire and Vermont, State Line	862	873
162.88	North Stratford, New Hampshire	897	908
166.50	Beathes, New Hampshire	865	876

Grand Trunk Railway—Eastern Division—Continued.

Distance. from Montreal.	Localities.	Elevation above Lake Saint Peter.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
170.87	Stratford Hollow station, New Hampshire	858	869
174.38	Grovetown junction, New Hampshire	878	889
180.25	River Ammonoosuc (bed) New Hampshire	943	954
180.87	Stark station, New Hampshire	949	960
190.00	West Milan (bed) New Hampshire	992	1,103
195.75	Milan, water station, New Hampshire	1,055	1,066
202.38	Berlin Falls station, New Hampshire,	1,011	1,022
207.75	Gorham station, New Hampshire	787	798
211.50	Shelburne station, New Hampshire	698	709
217.75	Gilead station, Maine	705	716
227.25	Bethel station, Maine	643	654
232.00	Loche station, Maine	715	726
241.62	West Paris station, Maine	475	486
250.00	South Paris station, Maine	381	392
256.50	Oxford station, Maine	322	333
261.00	Mechanic Falls station, Maine	289	300
267.50	Lewiston junction, Maine	237	248
269.75	Danville junction, Maine	192	203
269.88	Maine Central railway (crossing) Maine	189	200
274.62	New Gloucester station, Maine	107	118
282.00	North Yarmouth station, Maine	91	102
286.00	Yarmouth station, Maine	85	96
288.38	Cumberland station, Maine	74	85
291.75	Falmouth station, Maine	40	51
296.00	Portland and Rochester junction, Maine	2	13
297.75	Portland station, Maine	3	14
	LEWISTON BRANCH.		
267.50	Lewiston junction (main line) Maine	237	248
271.50	Taylor Brook, Maine	194	205
272.63	Auburn station, Maine	137	148
273.00	Lewiston station, Maine	129	140

GRAND TRUNK RAILWAY—QUEBEC AND RICHMOND DIVISION.

0.00	Montreal	.....	.....
76.50	Richmond station	380	391
88.38	St. Cyr siding	471	482
92.50	Kingsey station	433	444
100.50	Warwick station	470	481
108.50	Arthabaska station	419	430
117.25	Stanfold station	117	128
123.25	Somerset station	431	442
131.38	St. Julie Station	464	475
136.00	Lyster station	435	446
143.88	Methot's Mills station	433	444
152.12	St. Agassit station	395	406
157.75	Craig's Road station	324	335
164.88	Chandière Curve station	218	229
172.00	Point Levi (opposite Quebec) station	3	14

Through the permission of Mr. Hanneford, the chief engineer of the Grand Trunk railway, Mr. James Wilson procured for me the levels of the Grand Trunk railway along its various divisons. As the original profiles were burned, the road has subsequently been releveled, and the elevations of all the towns refer to track opposite the various stations. The horizontal measurements on the modern profiles do not always agree with those on time-tables, which were taken from the orginal profiles, and underwent subsequent changes.

TORONTO AND NIPISSING RAILWAY.

Distance. from Toronto.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Toronto station	8	255
9.00	Scarboro junction	300	547
14.00	Agincourt station	322	569
17.00	Millikens station	404	651
20.00	Unionville station	330	577
22.50	Markham station	393	640
29.00	Stouffville station	645	892
34.00	Goodwood station	843	1,090
36.00	Summit station	893	1,140
41.00	Uxbridge station	630	877
49.00	Wicks station	609	856
53.00	Sunderland station	604	851
59.00	Cannington station	599	846
63.00	Woodville station	649	896
64.75	Midland railway junction	634	881
66.00	Argyle junction	613	860
71.00	Eldon junction	623	870
74.50	Portage road	664	911
76.00	Kirkfield station	645	892
79.00	Victoria road	590	837
87.00	Coboconk station	600	847
.....	....do ...outlet of Balsam lake	(?) 588	835

These elevations refer to track opposite stations. They were furnished through the kindness of W. Goodenham, jr., Esq., president and managing director of the road. The road has subsequently passed under the management of the Midland railway.

MIDLAND RAILWAY.

Distance. from Port Hope.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Lake Ontario at Port Hope	00	247
1.50	Sand ridge	95	342
3.00	Clay ridge	140	387
5.00	Quay's station	234	481
8.00	Perrytown station	405	652
12.00	Clay ridge	558	805
13.25	Ridge	665	912
14.00	Summit station	663	910
17.50	Millbrook station	525	772
20.33	Ridge	650	897
22.75	Caran's Creek (bed)	525	772
24.00	Ridge	675	922
26.00	Valley	387	634
29.00	Ridge	665	912
32.25	Pigeon creek (bed)	558	805
33.75	Ridge	663	910
41.00	Lindsay station	618	865
41.25	Scugog river (below dam)	561	808
42.50	..do ...river (above dam)	568	815
44.00	Victoria junction	606	853
48.00	Cambray's ridge	679	926

Midland Railway—Continued.

Distance from Port Hope.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
57.00	Woodville junction	650	897
65.00	Beaverton station	516	763
67.00	Lancaster, surface of Simcoe lake	(?)477	724
67.50	Talbot river (bed)	465	712
69.00	Gamebridge tation	550	797
73.00	Brechin station	510	757
73.50	Ridge of rocks	519	766
75.00 / 78.00	Mara swamps	483	730
83.00	Bed of narrows between Simcoe and Conchouching lakes.	457	704
90.00	North river bed	389	636
101.00	Coldwater river bed	341	588
108.00	Sturgeon river bed	331	578
118.00	Midland, Georgian bay (average water-level)	332	579

LAKEFIELD BRANCH.

17.00	Millbrook junction	525	772
24.25	Moffat's creek	370	617
30.50	Peterborough station	403	650

MIDLAND RAILWAY—WHITBY DIVISION.

Distance from Whitby.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Lake Ontario at Whitby	00	247
0.75	G. T. R. junction	21	268
2.00	Whitby station	41	288
6.00	Gravel ridge	251	498
7.50	Brooklin station	292	539
12.00	Clay ridge	649	896
14.00	....do	781	1,028
19.00	Port Perry station	592	839
	....do .... Lake Scugog	(?) 596	843
24.00	Clay ridge	628	875
29.00	....do	680	927
31.50	Manilla station	708	955
33.50	Clay ridge	674	921
42.00	....do.... opposite to Mariposa station	637	884
43.50	....do	673	920
45.25	Lindsay station	604	851

GRAND JUNCTION DIVISION OF MIDLAND RAILWAY.

Distance from Belleville.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Lake Ontario at Belleville	00	247
15.00	Junction of N. Hastings branch	269	516
19.25	Rawdon creek bed	157	404
20.00	Stirling station	168	415
26.00	Bed of creek	128	375
32.00	....do	293	540
33.10	Trent river bed (limestone)	232	479
33.50	Campbellford station	260	507
44.00	Hasting station	388	635
44.75	Trent river bed above Hastings' dam	365	612
49.25	Ouse river bed	373	620
53.75		455	702
56.75	Indian river bed (limestone)	390	637
61.25	Ridge	495	742
65.00	Otonabee river bed	369	616
	Otonabee river (surface of water)	385	632
66.00	Peterborough station	403	650

NORTH HASTINGS BRANCH OF GRAND JUNCTION DIVISION.

0.00	Lake Ontario at Belleville		247.00
5.00	Hayden's Corners	102.00	349.00
9.00	Moira river bed	88.00	335.00
15.00	North Hastings junction	269.00	516.00
20.00	Rawdon creek	230.00	477.00
23.00	.....do	313.00	560.00
24.00	White lake (surface)	327.00	574.00
26.50	Granite ridge	333.00	580.00
27.50	Moira lake (surface)	272.00	519.00
29.75	Madoc station	337.00	584.00
33.50	Seymour's mine (surface)	508.00	755.00
34.50	Stoney ridge (surface)	574.00	821.00
37.00	Moore's mine (surface)	538.00	785.00
39.00	Eldorado (terminus)	510.00	757.00

T. A. Hay, Esq., acting engineer of the Midland railway and Grand Junction railway, kindly furnished all the above elevations of the Midland railway and its branches.

ONTARIO AND QUEBEC RAILWAY.

Distances. from Carlton.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Carlton station, junction with Credit Valley railway (about 5 miles from Toronto)	147.00	394.00
3.82	Yorkville station	159.00	406.00
7.20	River Don:		
	Banks	174.00	421.00
	Bed	64.00	311.00

Ontario and Quebec Railway—Continued.

Distance from Carlton.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
8.82	Little Don river bank	204.00	451.00
	do	91.00	338.00
13.31	Agincourt station	324.00	571.00
18.14	River Rouge bed	239.00	486.00
23.78	Duffin's creek station	399.00	646.00
29.22	Claremont station	638.00	885.00
38.12	Myrtle station	640.00	887.00
54.32	Summit	853.00	1,100.00
56.21	Pontypool station	817.00	1,064.00
68.30	Casan station	401.00	648.00
77.35	Peterborough, bed of Otonabee river	376.00	623.00
	Water-level of river	387.00	634.00
88.50	Indian river	414.00	661.00
113.65	Crow river	344.00	591.00
131.60	Gravel ridge	360.00	607.00
132.80	Tweed village	324.00	571.00
135.40	Moira river bed (limestone)	208.00	455.00
135.90	Granite ridge	252.00	499.00
136.80	Stoco lake	210.00	457.00
	Crossing Salmon river	363.00	610.00
	Clear lake	363.00	610.00
156.55	Sharbot lake	389.00	636.00
178.60	Summit	505.00	752.00
	Fall river crossing	328.00	575.00
	McGowan's lake	324.00	571.00
180.43	Perth station	184.00	431.00

As the road was not completed in the summer of 1883, the stations east of Peterborough were not located, but the country does not differ greatly in altitudes from those of the few above-mentioned lakes, &c.

These elevations were obtained from C. E. W. Dodwell, Esq., engineer of the Ontario and Quebec railroad.

SAINT LAWRENCE AND OTTAWA RAILROAD.

Distance from Prescott.	Localities.	Elevation above Lake St. Peter.	Elevation above mean tide.
Miles.		*Feet.*	*Feet.*
0.00	Saint Lawrence river at Prescott	228.00	239.00
3.41	Corner's ridge	*309.00	320.00
7.86	Nation river bed	267.00	278.00
16.25		344.00	355.00
22.25	Kemptville	280.00	291.00
27.18	Rideau creek	262.00	273.00
40.15	Spratt's ridge	340.00	351.00
52.78	Bed of Rideau river	100.00	111.00
53.20	Ottawa station	122.00	133.00

These elevations were taken from the profiles furnished by the chief engineer, J. S. Macklin, Esq.

The record of elevation of datum was defective, and the above reductions appear to be about 27 feet too low.

SAINT LAWRENCE RIVER.

Distance from Montreal.	Localities.	Elevation above Lake Saint Peter.	Elevation above mean tide.
Miles.	Flats of Lake Saint Peter, Saint Lawrence river, to which high tide reaches	*Feet.*	*Feet.* 11.00
0.00	Montreal, foot of No. 1 Lock, Lachine Canal.	12.00	23.00
8.50	Lake Saint Louis	55.75	66.75
	Beauharnois Canal:		
23.75	Foot of	55.75	66.75
35.00	Head of	140.00	151.00
	Cornwall Canal:		
67.75	Foot of	140.00	151.00
79.25	Head of	189.25	200.25
	Farran's Point Canal:		
84.25	Foot of	189.25	200.25
85.00	Head of	193.25	204.25
	Rapide Flat Canal:		
95.50	Foot of	197.00	208.00
99.50	Head of	212.25	223.25
	Galops Rapids Canal:		
101.00	Foot of	212.25	223.25
111.62	Head of	228.00	239.00
178.00	Saint Lawrence, navigation at Kingston	234.00	245.00

OTTAWA RIVER AND RIDEAU NAVIGATION.

0.00	Foot of No. 1 Lock, Montreal	12.00	23.00
8.50	Junction of Ottawa and Saint Lawrence rivers at head of Lachine canal	55.75	66.75
120.00	Entrance to Rideau canal at Ottawa city	118.00	129.00

Rideau canal and other water-courses between Ottawa city, on Ottawa river, and the Saint Lawrence river, at Kingston, form a navigation of 126.25 miles in length, with the summit of navigation 400 feet above lake Saint Peter, or 411 feet above mean tide.

The river elevations are taken from the Reports upon Public Works by the Chief Engineer of Canals.

QUEBEC, MONTREAL, OTTAWA AND OCCIDENTAL RAILWAY.

Distance from Montreal.	Localities.	Elevation above Lake Ontario.	Elevation above mean tide.
	MONTREAL TO OTTAWA.		
Miles.		*Feet.*	*Feet.*
0.00	Montreal, Hochelaga street and Montreal avenue	.....	70
2.92	Mile-end station	.....	225
8.22	Rivière des Prairies:		
	South bank	.....	82
	Surface of water	.....	00
	Rocky bed	.....	32
8.65	North bank	.....	87
14.20	.....	.....	150

Quebec, Montreal, Ottawa and Occidental Railway—Continued.

Distance from Montreal.	Localities.	Elevation above lake Ontario.	Elevation above mean tide.
	MONTREAL TO OTTAWA—Continued.		
Miles.		*Feet.*	*Feet.*
15.51	Saint Rose station		85
15.81	Mille Isles (bed of river)		43
18.60	Saint Jerome junction		135
25.80	Saint Janvier station		220
41.85	Saint Jerome station		311
25.90	Dobbies station		227
30.72	Saint Scholastique station		238
	do Bell river bed		214
35.67	Saint Hermas station		257
42.55	Lachute station		225
47.00	Muddy branch station		262
50.00			340
55.50	Grenville station		210
58.51	Calumet river		147
63.30	Pointe au Chêve station		188
72.83	Montebello station		172
75.60	Papineauville station		155
82.97	Nation river bed		125
83.17			185
88.74	Thurso station		186
91.00	Blanche river bed		128
98.20	Buckingham station		183
	do Rivière aux Lievres, bed		150
108.80	East Templeton station		155
112.50	Gatineau Point station		175
116.78	Hull station		185
124.24	Aylmer station		222

The levels of this section of the Quebec, Montreal, Ottawa and Occidental Railway were furnished from the construction profiles (referred to harbor datum), from which they were reduced to mean ocean level.

ALPHABETIC LIST OF ELEVATIONS IN CANADA, ABSTRACTED FROM THE FOREGOING PROFILES.

Station.	Authority.	Elevation above mean ocean level.
		Feet.
Acton, Ontario	Grand Trunk R. R	1,159
Quebec	Grand Trunk R. R	312
Agincourt	T. & N. R. R	569
Ailsa Craig	Grand Trunk R. R	754
Allanburg	Welland R. R	592
Allandale	H. & N. W. R. R	755
..do	Northern R. R	738
Attarcliffe	Canada Southern R. R	591
Alton	T., G. & B. R. R	1,298
Amaranth	T., G. & B. R. R	1,546
Angus (Pine River)	Northern R. R	627
Appin	Great Western R. R	743
Argyle	T. & N. R. R	860
Arthabaska	Grand Trunk R. R	430
Arthur	T., G. & B. R. R	1,525
Aylmer	Q., M., O. & O. R. R	222
Ayr	Credit Valley R. R	965
Baden	Grand Trunk R. R	1,157
Ballantyne's	Grand Trunk R. R	361
Baptist Creek	Great Western R. R	595
Barrie	Northern R. R	726
Do	H. & N. W. R. R	872
Do..Lake Simcoe	Northern R. R	722
Beaverton	Midland R. R	763
Beeton junction	H. & N. W. R. R	716
Beechville	Great Western R. R	907
Belgrave	Great Western R. R	1,062
Belleville	Grand Trunk R. R	286
Belœil	Grand Trunk R. R	63
Do..Richelieu river (surface)	Grand Trunk R. R	48
Beamsville	Great Western R. R	294
Berkeley	T., G. & B. R. R	1,329
Berlin	Grand Trunk R. R	1,101
Do..junction	Grand Trunk R. R	1,095
Bertie	Grand Trunk R. R	618
Bismarck	Canada Southern R. R	711
Blackwell	Grand Trunk R. R	602
Blandford	Credit Valley R. R	972
Bluevale	W., G. & B. R. R	1,079
Blyth	Great Western R. R	1,081
Bolton	T., G. & B	838
Bothwell	Great Western R. R	691
Bowmanville	Grand Trunk R. R	263
Bradford	Northern R. R	725
Bramly	Northern R. R	888
Brampton	Credit Valley R. R	724
Do	Grand Trunk R. R	713
Branchton	W., G. & B. R. R	897
Brantford	Grand Trunk R. R	706
Do.... bridge over Grand river	Great Western R. R	659
Do.... bed of Grand river		65

Station.	Authority.	Elevation above mean ocean level.
		Feet.
Brechin	T. & N. R. R	757
Brecon	Great Western R. R	900
Brentwood	Northern R. R	647
Brealau	Grand Trunk R. R	1,025
Brigden	Canada Southern R. R	636
Bright	Grand Trunk R. R	1,041
Brighton	Grand Trunk R. R	304
Britannia Mills	Grand Trunk R. R	222
Brockville	Grand Trunk R. R	281
Brompton Falls	Grand Trunk R. R	471
Bronté	Great Western R. R	346
Brookfield	Canada Southern R. R	610
Brooklin	Midland R. R	537
Brucefield	Great Western R. R	890
Brussels	W., G. & B. R. R	1,122
Buckingham	Q., M., O. & O. R. R	183
Burford	Great Western R. R	844
Burlington	Great Western R. R	340
Do	H. & N. W. R. R	253
Do....Beach (Ocean House)	H. & N. W. R. R	255
Do....(G. W. R. R. crossing)	H. & N. W. R. R	318
Buxton	Canada Southern R. R	602
Carlton	Grand Trunk R. R	406
Do.(sand and gravel bed)	T., G. & B. R. R	407
Caledon (sand bed near)	H. & N. W. R. R	942
Camalachie	Grand Trunk R. R	649
Campbellford	Midland R. R	507
Campbellville	Credit Valley R. R	929
Canaan	O. & Q. R. R	648
Canfield (G. T. R. R. crossing)	Canada Southern R. R	621
Do..junction crossing	Grand Trunk R. R	616
Cannington	T. & N. R. R	846
Centralia	Great Western R. R	867
Chandière Curve	Grand Trunk R. R	229
Charing Cross	Canada Southern R. R	628
Charleston (gravel bed near)	T., G. & B. R. R	1,367
Chatham	Great Western R. R	598
Chatsworth (gravel beds)	T., G. & B. R. R	944
Clandeboyne	Great Western R. R	888
Claremont	O. & Q. R. R	885
Clear lake	O. & Q. R. R	610
Clifford	W., G. & B. R. R	1,234
Clinton	Great Western R. R	919
Do	Grand Trunk R. R	921
Coaticoke	Grand Trunk R. R	1,007
Cobocoonk	T. & N. R. R	847
Cobourg	Grand Trunk R. R	297
Colborne	Grand Trunk R. R	322
Colchester	Canada Southern R. R	611
Collingwood	H. & N. W. R. R	589
Do	Northern R. R	590
Colwell junction	Northern R. R	750
Comber	Canada Southern R. R	604
Compton	Grand Trunk R. R	734
Cook's Station	Grand Trunk R. R	643
Cooksville (gravel)	Credit Valley R. R	393
Copetown	Great Western R. R	749
Corinth	Great Western R. R	769
Cornell	Canada Southern R. R	797
Cornwall	Grand Trunk R. R.	192

Station.	Authority.	Elevation above mean ocean level.
		Feet.
Coteau Landing	Grand Trunk R. R	161
Courtright (Saint Clair river at)	Canada Southern R. R	584
Craigleith	Northern R. R	590
Craigvale	Northern R. R	879
Danby	Grand Trunk R. R	438
Dean's	Canada Southern R. R.	665
Dixville	Grand Trunk R. R	1,127
Dobbin's	Q., M., O. & O. R. R	227
Dorchester	Great Western R. R	852
Drayton	W., G. & B. R. R.	1,394
Drumbo	Credit Valley R. R	1,013
Dublin	Grand Trunk R. R	1,104
Duffin's Creek	Grand Trunk R. R	287
Dundalk	T., G. & B. R. R	1,701
Dundas	Great Western R. R	517
Do. marsh (track over old outlet of)	Great Western R. R	329
Duntroon	H. & N. W. R. R	936
Dunville	Grand Trunk R. R	585
East Templeton	Q., M., O. & O. R. R	155
Eastwood	Great Western R. R	973
Edwardsburg (Cardinal)	Grand Trunk R. R	277
Eldon junction	T. & N. R. R	870
Eldorado	Midland R. R	757
Elora	W.. G. & B. R. R	1,297
Do..junction (Church Falls)	Credit Valley R. R	1,260
Ekfred	Canada Southern R. R	750
Erie	Canada Southern R. R	597
Erie and Niagara railway junction	Canada Southern R. R	608
Erin	Credit Valley R. R	1,295
Essex Center	Canada Southern R. R	646
Ethel	W., G. & B. R. R	1,174
Everett	H. & N. W. R. R	796
Exeter	Great Western R. R	875
Farran's Point	Grand Trunk R. R	242
Flesherton (sand and gravel bed)	T., G. & B. R. R	1,557
Fletcher	Canada Southern R. R	599
Fordwick	T., G. & B. R. R	1,200
Forrest	Grand Trunk R. R	712
Fort Erie	Grand Trunk R. R	606
Fergus	W. G. & B. R. R	1,358
Fergus junction	Credit Valley R. R	1,357
Galt	W., G. & B. R. R	888
Do	Credit Valley R. R	936
Do	Grand Trunk R. R	880
Gamebridge	T. & N. R. R	797
Ganonoque	Grand Trunk R. R	261
Garafraxa junction	Credit Valley R. R.	1,452
Gatineau Point	Q., M., O. & O. R. R	175
Georgetown	Grand Trunk R. R	847
Do....junc. (H. & N. W. R. R.)	Grand Trunk R. R	874
Do....(gravel bed)	H. & N. W. R. R	891
Gilford	Northern R. R	753
Glencairn	H. & N. W. R. R	738
Glencoe	Great Western R. R	730
Do...junction	Great Western R. R	728
Glen Williams	H. & N. W. R. R	910
Gorrie & Wroxeter	T., G. & B. R. R	1,123
Goderich	Grand Trunk R. R.	730
Goldstone	W., G. & B. R. R	1,257
Goodward	T. & N. R. R	1,090

Station.	Authority.	Elevation above mean ocean level.
		Feet.
Gowan	Northern R. R	819
Gowanstown	W., G. & B. R. R	1,285
Granton	Grand Trunk R. R	1,034
Gravenhurst	Northern R. R	819
Grenville	Q., M., O. & O. R. R	210
Grimsby	Great Western R. R	287
Guelph	Great Western R. R	1,058
Do	W., G. & B. R. R	1,078
Hagersville	Canada Southern R. R	740
Hamburg	Grand Trunk R. R	1,127
Hamilton	Great Western R. R	255
Do..(Wentworth st. south)	H. & N. W. R. R	377
Do..(Barton st)	H. & N. W. R. R	277
Do..(Wentworth st. north)	H. & N. W. R. R	266
Harley	Great Western R. R	837
Harrisburg junction	Great Western R. R	734
Do.... junc. (with main line G. W. R. R)	W., G. & B. R. R	734
Do....(track)	Great Western R. R	734
Harriston	T., G. & B. R. R	1,246
Do	W., G. & B. R. R	1,264
Harwick	Canada Southern R. R	651
Hastings	Midland R. R	635
Hawtrey	Canada Southern R. R	786
Hawkestone	Northern R. R	779
Hayden's Corners	Midland R. R	349
Henfrye	W., G. & B. R. R	1,166
Hespeller	Wellington, Gray & Bruce R. R	942
Hensall	Great Western R. R	899
Highgate	Canada Southern R. R	739
Hillsburg junction	Credit Valley R. R	1,424
Holland landing	Northern R. R	743
Hull	Q., M., O. & O. R. R	185
Hyde Park junction	Great Western R. R	886
Ilderton	Great Western R. R	937
Innerkip	Credit Valley R. R	972
Ingersoll	Great Western R. R	879
International bridge	Grand Trunk R. R	588
Inwood	Canada Southern R. R	691
Iona	Canada Southern R. R	745
Iroquois	Grand Trunk R. R	243
Jarvis	Great Western R. R	701
Do..Loopline crossing	H. & N. W. R. R	699
Jordan	Great Western R. R	311
Kempenfeldt	Northern R. R	757
Kemptville	St. L. & O. R. R	291
Kenilworth	T., G. & B. R. R	1,486
Kinloss	W., G. & B. R. R	1,046
King	Northern R. R	955
Kingsey	Grand Trunk R. R	444
Kingstown	Grand Trunk R. R	274
Kinkardine	W., G. & B. R. R	590
Kirkfield	T. & N. R. R	892
Kleinburg	T., G. & B. R. R	715
Komoka	Great Western R. R	811
Do..junction	Great Western R. R	822
Lachute	Q., M., O. & O. R. R	225
Lake Simcoe	Northern R. R	722
Lake Saint Louis		66.75
Lambton	Credit Valley R. R	412

Station.	Authority.	Elevation above mean ocean level.
		Feet.
Lancaster	Grand Trunk R. R	165
Lansdowne	Grand Trunk R. R	334
Lefroy	Northern R. R	779
Lennoxville	Grand Trunk R. R	500
Lethbridge	Northern R. R	756
Lewisville	Great Western R. R	615
Limehouse	Grand Trunk R. R	1,057
Do....siding	Grand Trunk R. R	1,094
Lindsay	Midland R. R	851
Lisgar	Grand Trunk R. R	529
Listowel	W., G. & B. R. R	1,263
Londesburg	Great Western R. R	974
London	Grand Trunk R. R	815
Do ...Richmond street	Great Western R. R	806
Do ...Thames river, bed	Great Western R. R	754
Longford	Northern R. R	736
Longwood	Great Western R. R	752
Lucan	Grand Trunk R. R	991
Lucknow	W. G., & B. R. R	910
Luther	T., G. & B. R. R	1,544
Lyn	Grand Trunk R. R	286
Lynden	Great Western R. R	757
Lyster	Grand Trunk R. R	446
Madoc	Midland R. R	584
Maitland river (bed)	Great Western R. R	942
Mallorytown	Grand Trunk R. R	336
Malton	Grand Trunk R. R	550
Mandamin	Great Western R. R	647
Manilla	Midland R. R	955
Markdale	T., G. & B. R. R	1,359
Markham	T. & N. R. R	640
Mariposa (clay ridge opposite)	Midland R. R	884
McGowan's lake	O. & Q. R. R	571
Meadsville	Credit Valley R. R	566
Meaford	Northern R. R	674
Melbourne	Canada Southern Railway	735
Michigan Air line junction	Grand Trunk R. R	723
Midland junction	T. & N. R. R	881
Mildmay	W., G. & B. R. R	1,030
Mile End	Q., M., O. & O. R. R	225
Millbrook	Midland R. R	775
Do....junction	T. & N. R. R	772
Millikins	T. & N. R. R	651
Milton	H. & N. W. R. R	661
Do	Credit Valley R. R	663
Mimico	Great Western R. R	307
Minessing	Northern R. R	619
Mitchell	Grand Trunk R. R	1,122
Moira	Midland R. R	519
Montreal (crossing Wellington street)	Grand Trunk R. R	51
Do... (Hochelaga street and Montreal avenues)	Q., M., O. & O. R. R	20
Montreal (Point St. Charles)	Grand Trunk R. R	51
Do... (center of Victoria bridge)	Grand Trunk R. R	115
Do... (St. Lawrence river, beneath Victoria bridge)	Grand Trunk R. R	333
Montebello	Q., M., O. & O. R. R	172
Moorefield	W., G. & B. R. R	1,351
Moore's Mine	Midland R. R	785
Mount Forest	T., G. & B. R. R	1,350

Station.	Authority.	Elevation above mean ocean level.
		Feet.
Mount Pleasant	Great Western R. R	810
Mount Vernon	Great Western R. R	837
Muddy Branch	Q., M., O. & O. R. R	262
Muirkirk	Canada Southern R. R	725
Muskoka lake	Northern R. R	747
Newbury	Great Western R. R	702
Newcastle	Grand Trunk R R	296
New Haven	Grand Trunk R. R	629
New Market	Northern R. R	772
Newry	W., G. & B. R. R	1,204
Newtonville	Grand Trunk R. R	294
North Hastings junction	Midland R. R	516
Norval	Grand Trunk R. R	819
Norwich	Great Western R. R	844
Nottawa	H. & N. W. R. R	707
Oakville	Great Western R. R	340
Oil City	Canada Southern R. R	663
Onondaga	Grand Trunk R. R	664
Orangeville	Credit Valley R. R	1,358
Do	T., G. & B. R. R	1,398
Do ....junction	T., G. & B. R. R	1,616
Orillia	Northern R. R	726
Oshawa	Grand Trunk R. R	333
Ottawa	St. L. & O. R. R	133
Owen Sound	T., G. & B. R. R	586
Page	T., G. & B. R. R	1,283
Paisley	W., G. & B. R. R	776
Palmerston	W., G. & B. R. R	1,314
Papineauville	Q. M. & O. R. R	155
Paris	Great Western R. R	842
Parkhill	Grand Trunk R. R	663
Penetanguishene	Northern R. R	587
Perch	Grand Trunk R. R	595
Perry	Canada Southern R. R	590
Perrytown	Midland R. R	652
Perth	O. & Q. R. R	431
Peterboro'	T. & N. R. R	650
Petersburgh	Grand Trunk R. R	1,211
Phelpston	Northern R. R	724
Pinkerton	W., G. & B. R. R	861
Point Clair	Grand Trunk R. R	109
Pointe au Chêne	Q., M., O. & O. R. R	188
Poutypool	O. & Q. R. R	1,004
Port Colborne	Grand Trunk R. R	581
Do	Welland R. R	586
Port Elgin	W., G. & B. R. R	675
Port Hope	Grand Trunk R R	287
Port Huron	Grand Trunk R. R	588
Port Perry	Midland R. R	839
Port Robinson	Welland R. R	589
Port Stanley (level Lake Erie)	Great Western R. R	574
Port Union	Grand Trunk R. R	266
Prescott	Grand Trunk R. R	310
Do. junction	Grank Trunk R. R	303
Preston	Wellington, Gray & Bruce R. R	927
Princeton	Great Western R. R	932
Proton	T., G. & B. R. R	1,613
Point Levi (opposite Quebec)	Grand Trunk R. R	14
Quay's	Midland R. R	481
Richby	Grand Trunk R. R	819

Station.	Authority.	Elevation above mean ocean level.
		Feet.
Richmond	Grand Trunk R. R	391
Richmond Hill (gravel pit)	Northern R. R	847
Rideau	Grand Trunk R. R	303
Ridgetown	Canada Southern R. R	660
Ripley siding	W., G. & B. R. R	807
Rivière Baudette	Grand Trunk R. R	173
Rockford	T., G. & B. R. R	912
Rockpass	Northern R. R	777
Rockwood	Grand Trunk R. R	1183
Rodney	Canada Southern R. R	693
Saint Agassit	Grand Trunk R. R	406
Saint Anne	Grand Trunk R. R	124
Saint Bruno	Grand Trunk R. R	98
Saint Catharines	Great Western R. R	357
Do (old station)	Welland R. R	375
Saint Clair junction	Canada Southern R. R	765
Saint Cyr siding	Grand Trunk R. R	482
Saint Hermas	Q., M., O. & O. R. R	257
Saint Hilaire	Grand Trunk R. R	86
Saint Hulbert's	Grand Trunk R. R	91
Saint Janvier	Q., M., O. & O. R. R	220
Saint Jerome	Q., M., O. & O. R. R	311
Do junction	Q., M., O. & O. R. R	135
Saint Julie	Grand Trunk R. R	475
Saint Lambert's junction	Grand Trunk R. R	76
Saint Madeline's	Grand Trunk R. R	119
Saint Mary's	Grand Trunk R. R	1,083
Saint Paul's	Grand Trunk R. R	1,166
Saint Rose	Q., M., O. & O. R. R	85
Saint Scholastique	Q., M., O. & O. R. R	238
Saint Thomas	Canada Southern R. R	766
Do	Great Western R. R	758
Sarnia	Grand Trunk R. R	587
Do. water, in Saint Clair river	Grand Trunk R. R	582
Do. (near Lake Huron)	Great Western R. R	589
Scanbon's	Northern R. R	741
Scarboro junction	Grand Trunk R R	546
Seaforth	Grand Trunk R. R	1,009
Sebringville	Grand Trunk R. R	1,173
Seneca (Caledonia)	Grand Trunk R. R	658
Severn	Northern R. R	725
Do (crossing of plank-road)	H. & N. W. R. R	653
Do. river	Northern R. R	711
Shakespeare	Grand Trunk R. R	1,184
Sharbot lake	O. & Q. R. R	636
Shedden	Canada Southern R. R	726
Shelburne	T., G. & B. R. R	1,629
Sherbroke	Grand Trunk R. R	486
Simcoe	Great Western R. R	719
Somerset	Grand Trunk R. R	442
Southampton	W., G. & B. R. R	516
South Durham	Grand Trunk R. R	609
Southeastern R. R. junction	Grand Trunk R. R	321
Southwold	Canada Southern R. R	745
Springfield	Canada Southern R. R	796
Springford	Great Western R. R	822
Stanford	Grand Trunk R. R	128.25
Stayner	Northern R. R	717
Stevensville	Canada Southern R. R	589
Stirling	Midland R. R	415